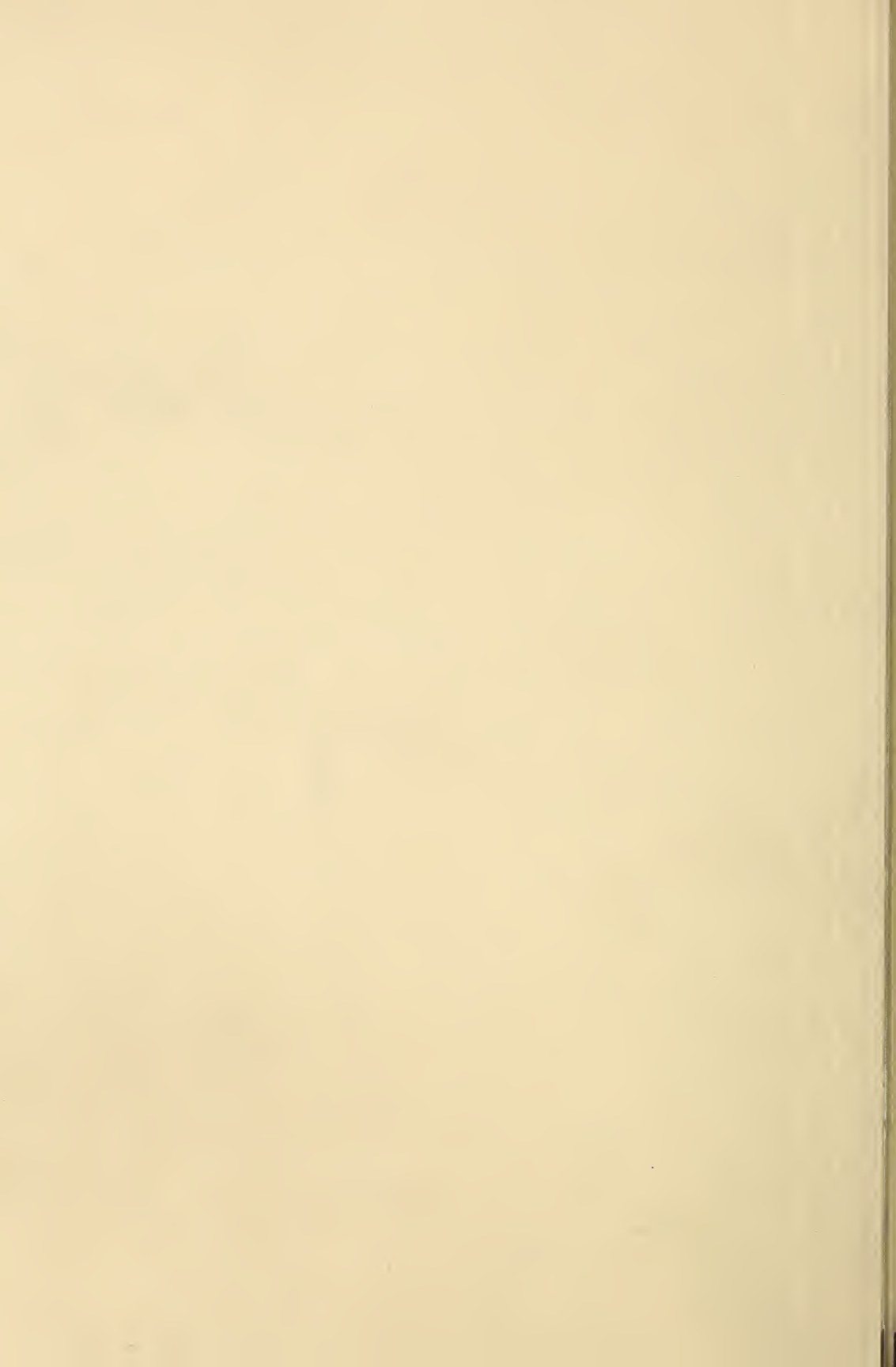
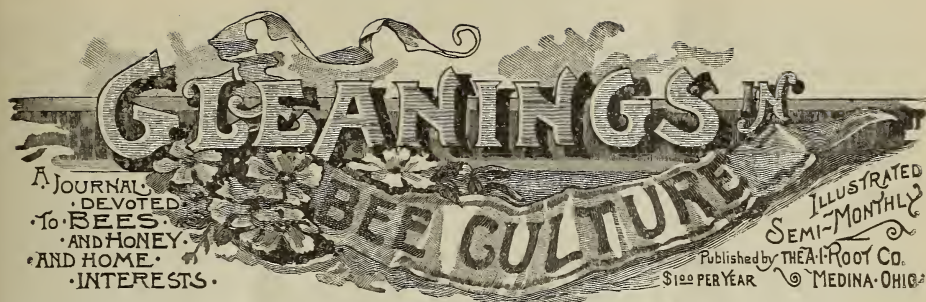


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"IF A. I. Root would only get the bee-fever over again it would be the biggest kind of an item."—E. E. Hasty, in *Review*. Correct.

C. W. Post says that in 1892, during buckwheat flow, 525 colonies in his apiary were not overstocked. So reported at Ontario convention.

I KNOW all about some things, but it isn't about bees. [Now look here; you know a lot more about bees than you profess to know. You are too modest.—Ed.]

MARCH 16 I looked into the new and commodious quarters of the Chicago branch of the A. I. Root Co., at 118 Michigan St., and found it didn't look so much like a branch as a whole tree.

"WE CONSIDER the drones as important, in the making of a good apiary, as the queens."—Dadant & Son, in *A. B. J.* Yes, no doubt about it; but in actual practice very little attention is paid to it.

IN REPLYING to the questions on p. 233, remember the important thing is to tell what use can be made of sweet clover as a forage-plant. The time for discussing its value as a honey-plant is past.

I'M MUCH OBLIGED to J. E. Hand for his explanation on page 214. I understand the matter perfectly now. He has "perfect control" of his bees by watching their instincts and letting them do as they please.

HARPER'S MAGAZINE has an article by Ninetta Eames, in which she says, "Instances are not uncommon where a single Italian swarm has produced one thousand pounds of extracted honey in one year." O Ninetta! Ninetta!

IN CANADA, by the new law, says C. B. J., "Sugar honey fed to bees, or any other substance such as glucose, is simply not recognized as any thing more than it is, and only that gathered from flowers has a legal standing as honey."

"TEN YEARS AGO I invested in alfalfa seed; and up to the present time I have never seen a bee upon it." So says J. McArthur, of Canada, in *A. B. J.* [His locality is not adapted for secreting honey. It requires a hot dry climate to do its best.—Ed.]

HASTY, in *Review*, calls attention to the fact that Baldensperger's figures make the queen average 1748 eggs per day between March 3 and August 3. But remember that was in a colony probably less than 40,000. What would it be in a colony of 75,000, 100,000, or 150,000?

WINTER STORES. W. C. Copeland reports, in *A. B. J.*, that for the forty-five days ending Jan. 11, average consumption of his bees in Tennessee was 1½ oz. daily; largest average by any one colony, 2 oz.; smallest, 1 oz. That makes a general average of only about 2¼ lbs. per month.

THOS. EVANS sends me a 10-foot strip of foundation made on a machine he invented three years ago. Don't know how much it's like the Weed process; but what made you keep so quiet about it, friend Evans? [Because he knew long sheets were not a new idea, probably.—Ed.]

"AFTER-CELLS," the name proposed by Chas. Norman for worker-cells turned into queen-cells, is seconded by Hasty. He thinks other queen-cells can be called simply "cells" or "queen-cells;" or if emphasis is needed, "normal cells." Guess we can settle on "after-cells," any way.

WHOLE-WHEAT FLOUR. T. F. Bingham says in *Review*, "I go to a roller-mill and ask for 'brake-stock' just before it goes to the 'grater.'" Then he gets all but the coarsest bran, and they have nice gems and raised griddle-cake. *Later*.—Works well at our house too. [And here too.—Ed.]

SOME SAY packing does good in winter by keeping the bees warmer. Others say it does harm by keeping out the heat of the sun. J. L. Gandy (*A. B. J.*) compromises the matter by packing the north and west, leaving east and south unprotected. Thus he protects the two coldest sides and lets the sun do its work too. Why isn't that a sensible idea?

THE ONTARIO B. K. ASS'N received in 1895, for membership fees, \$175; affiliation fees of 13 societies, \$65; government grant, \$650; total, \$890. Those Kanucks know just how to do it. [I wish we had for our national association some of the money that is wasted in the government seed business.—Ed.]

REFERRING to p. 215, friend Phelps, I have the furniture-nails in use, and also common nails, which I like better. We can't all agree about "best things." But I'm inclined to think that's a good idea of yours to have a space at end of top-bar, and have the spacing done lower down. [The point is a good one.—Ed.]

MOUNTAIN-LAUREL honey has the reputation of being poisonous; but "Novice," in *A. B. J.*, doubts whether it is ever poisonous. Forty acres of laurel were within a mile of his bees; he extracted twice while it was in bloom; the honey was all eaten near home, and no one was sick from it. [A writer in our own columns gave expression to the same thought. It must be that it is not always poisonous.—Ed.]

"BEE PARALYSIS, dysentery, and spring dwindling are exactly the same family of diseases, only in a little different form. . . . If we are not mistaken, these diseases are one and the same thing, and really have no name."—*Southland: Queen*. I don't know about their being the same; but surely it sounds queer to call a disease by a name, and then say it has no name. [I should say that the three diseases were very different in character.—Ed.]

WHAT DOES AIL the *British Bee Journal*? It recommends fastening foundation in sections with melted wax or a warm flatiron, and says, "Sections are now made with a split top-bar for reception of the foundation." That was true 15 years ago; but I didn't know split top-bars were still in existence, or that any one would now putter with melted wax or warm flatirons. [Split top-bars and grooves in sections—yes, we make lots of them. Bee-keepers won't use all the same appliances.—Ed.]

DOOLITTLE, in *A. B. J.*, thinks overproduction is to blame for the fact that, considering difference in labor and product at the present day, honey brings little more than one-third what it did years ago. J. H. Martin thinks there's no use talking about competition so long as people eat less than one pound per capita. He thinks glucose makes the low price. [Knowing what I do, I incline more toward Martin's idea. We must meet this glucose competition by the strong arm of the law. Unless bee-keepers organize, and make a good fight, honey will sell lower yet, I fear.—Ed.]

SECRETARY MORTON, against his better judgment, is forced by Congress to send out 10,125,000 packets of garden seeds and 1,000,000 packets of flower seeds. They'll probably go largely to people who don't care for them, and will throw

them into the waste-basket, and to those who can buy what they want, the poorer class who need them getting little chance. Wonder if it will be the same way if the government prints bee-books. [There is hardly an agricultural paper that has not warmly supported Secretary Morton; and it is a shame that he should have been sat down on, for he surely was in the right. The government seed business has been an outrage, and a senseless drain on Uncle Sam's pocket; and every right-thinking Congressman should have supported the Secretary. But I presume considerable pressure was brought to bear upon our Senators and members of the House because certain friends and patrons were after the salaries and clerk hire that the seed business has been giving. I for one wish the patronage business could be taken out of the hands of every law-maker in the country; and that every one desiring a government position should get it only under civil-service rules. However, the Secretary's protest was not entirely in vain. If the government *must* furnish seeds free, it is better to buy them under the laws of competition than to go into the business of putting them up. Government bulletins on the other hand are designed to inform the people at once of the progress of the work done, and have their legitimate and proper use. They could hardly, I think, be classed in the same category as the government seed business.—Ed.]



There is a rumor floating around California that bee-keepers somewhere in the world—perhaps Patagonia—are making a very good yield of comb honey right in the face of a severe drouth. They do it by feeding sugar. Now, I really do not believe it; and I hope our Patagonian friends can contradict such statements.

I am not sure but our exchange will need the services of an expert taster when we get to grading honey. Few men are able to distinguish the different flavors of honey after sampling a score of cans. It might be well to educate a class of tasters just as they do in the tea-trade. Come to think of it, it being merely a matter of tongue, our ladies—but, there; I won't say another word.

On page 77, *March Progressive*, "Little Bee" puts California down as one of the States that is afflicted now and then with a bad failure in the honey yield. While that is true in relation to this southern end of the State, it is not true about the central and eastern portion. In those localities the yield is from alfalfa, and every year is a honey-producer. And, by the way, the

March number of the *Progressive* is a readable number, keeping in line with its heading, "Progressive."

The first week in March witnessed copious rains throughout the State of California. The value of such a wetting can be estimated only by hundreds of thousands of dollars, aside from the honey interests. All kinds of grain crops are saved from failure. With the rain came snow. So rare is this in our valley that people went wild over it. The hour or so that it covered the ground was spent mostly in hurling snowballs.

At a recent meeting of bee-keepers in Perris, Cal., commission men were given their share of criticism, and a lady bee-keeper was particularly severe upon a well-known firm in Chicago. This lady had consigned honey to the above firm, and the returns were not up to expectations, and she was angry. Said she, "I'd like to give them a dose of bees. If that wouldn't make them disgorge, it would at least make them mighty uncomfortable." As to the right or wrong of the transaction, I know nothing.

[That Chicago firms' quotations do not appear, if I am correct, in any of the bee journals. A commission firm must not only be honest, but must be reasonably fair to get and hold space in our honey columns.—Ed.]



THE HONEY EXCHANGE.



Is there any law, Mr. Editor, against one man's stealing the ideas of another, before the other man gets them formulated and spread before the public? If there is not, there certainly should be, and a very severe one at that.

"The man that steals my purse steals trash," generally; "but he that filches from me" my intellectual triumphs "makes me poor indeed." Now, there is that Somnambulist, in *Progressive*, who pretends to be always asleep; but I don't believe he is asleep at all. He just puts that on, so that he will be considered irresponsible for his actions. But I hold him responsible all the same, for the mad energy with which he supplanted me as follows:

California certainly possesses a climate charmingly favorable to the cultivation of conceit, and it takes lots of that to face fraud. It seems almost too bad that future history will have to credit her bee-keepers with the honor of having taken the initiatory steps in this movement. And shall it be chronicled that other sections of the country stood idly by during this contest, and, when victory had been won, were not only willing but anxious to share the accruing benefits? For, truly, whatever is ben-

eficial to them is proportionately so to us. If co-operation be good for them, why not for us? Let us at least co-operate with them to the extent of keeping out of the large cities with our small crops, thereby building up our home markets, and at the same time giving them full sweep of the commission houses, and the grand opportunity of educating the masses as regards the *real* value of pure honey. 'Tis said, "It's a poor rule that will not work both ways." We, in protecting our home markets, will in so far protect our California friends. They, in protecting themselves, will protect us.

Yes, Somnambulist, of course these ideas are all mine. You took them in your sleep, and were not responsible. Yes, California sets the ball rolling. But this movement will not and can not be confined to this coast. Of course, *we* are the prime movers in projecting and perfecting the scheme, and deserve all the honors that future historians will pile around our illustrious names. But why should the rest of the country stand "idly by" till victory is won? Why not join us and help to win the victory? It is as sure as fate or the tax-gatherer, that this will become a national movement. It may go on for a time as the "California Honey Exchange," but changes will creep in. The bee-keepers of the East will see the folly of shipping to a commission merchant who may sell comb honey at 16 cents, and make returns at 12 or even less, when, by paying a dollar, he can have his honey honestly handled at the actual cost of selling it. The bee-keepers of the East *will* come in and join us on the way to victory. It is our interest that you should do so, as well as yours. While you keep shipping your honey to commission men, *our* exchange can't get or hold control of the market; but once let the Exchange include in its membership a vast majority of the bee-keepers in the Union, and it would control the price of honey. The little that would be produced by outsiders and non-professionals would count for nothing. The Exchange would practically have control of all the honey in the United States. A very small per cent would pay all its expenses, because it would do a very heavy business. For instance, the Chicago house would do all the honey business that 10 or 15 great houses do now. Where one of these houses would sell from one to two thousand dollars' worth of honey per month, the Exchange, having practically all the honey in the market, would sell from ten to twenty and even thirty thousand dollars' worth per month. I am talking of such cities as Chicago and New York. The general manager must be an "honest, pushing, wide-awake, capable man." He must be like the train-dispatcher of a great railroad, who knows the exact position of every train on the road, both day and night. So *our* manager would have to know the exact supply of honey on hand in every city in the United States. He would be able to supply the different markets—not from a central office but by the honey that lies nearest that market ready to ship, and only awaiting his word of

command. Of course, all the large cities would have subordinate managers, or salesmen, under and responsible to the general manager and to the board of control. Many of these subordinate salesmen might be, to save the establishment of a warehouse, etc., some well-known, responsible, and undoubtedly honest commission house. They can be bound by an iron-clad contract to sell no honey below the price set by the general manager, for the different grades; or, otherwise, pay the difference. Also, in case honey is broken down and leaking badly, so that the shipper is likely to lose in weight, etc., the commission man should be allowed to hold a coroner's inquest over that lot, and, by the testimony of three disinterested men, the shipper should abide, and be satisfied. Other necessary restrictions might be added as occasion required. These houses—one in each city—would be glad to get this business at 5 per cent commission. Why? Because they would do five times the business in honey that they did before, when they could sell only what came to them. Now they would have control of the market, and, practically, sell all that came to that city. Any one knows that, if one house should have the handling of all the honey that goes to any city in the country, they would have a larger business in that line. Such a house, under the watchful eye of a general manager and a board of control, would be very careful not to wantonly offend or defraud a bee-keeper. Under this system the commission house should collect $7\frac{1}{2}$ per cent commission—5 per cent for themselves, and $2\frac{1}{2}$ for the head office, to pay expenses, etc. Who would not be willing to pay $7\frac{1}{2}$ per cent to have his honey honestly handled? Why, more than half the honey shippers would make money if they had to pay 20 per cent and get the full returns for their honey. This system would likewise kill out all the fraudulent commission men, and, to a great extent, the adulterators too. It will stop adulteration, because honest retailers will know where to get pure honey. Honey will advance, because one great organization will control the bulk of all the honey in the United States. When people can't get comb honey for less than 25 cents per pound they will pay that price—in fact, are paying it now to sharpers. What we want, and must have, is to get 25 per pound for comb—first quality—less freight, commission, drayage, etc. Unless the honey is shipped a long distance these charges should not aggregate more than 1 cent per pound; but under the present slipshod system the *et cetera* is the largest item in the bill of charges against the bee-keeper. "Broken down," "leaking," "very dark," and "dark," are the bugbears they set up to confront him. What can the poor wretch do? They are away off, hundreds of miles, and have sold his property. He may have men near home who saw his honey, and

know its quality; but the commission merchant has his men to swear it was black, broken down, or leaking, as the case may be. The bee-keeper has not the ghost of a chance to win in the contest.

Bee-keepers of the East, will you join us, and make it a national exchange? Join our Exchange, irrespective of State. Read the rules and by-laws in the bee-papers. Of course, as occasion requires you will have a voice in amending or altering these rules, and in the selection of the officers. Come in from every town and county in the Union. Force it into a national exchange; join in, all ye gathering hosts, from the far Atlantic to the Pacific shore. Roll in by the hundreds; rush in by the thousands, and teach the blood-suckers that have drained the life-blood from your business that you intend hereafter to set the price of your own products. "United, we stand; divided, we fall." The laws of trade are inexorable. Where there is great opposition, and anxiety to sell, prices must and will come down; whereas, if the business were all in the hands of one great corporation, as Prof. Cook suggests, like the Standard Oil Company, there would be no such result. The object of the Exchange, however, would be, not to wring out millions from the pockets of the people, to create an aristocracy of wealth, but to demand and obtain a fair and living price for our products. Come, one and all, and we will travel together. Come from the east, west, north, and south. Skylark, and the other great men who have organized this magnificent triumph over fraud and dishonesty, welcome you with open arms. We will march on to victory together. We of California can only cut off the middlemen here, and have an honest sale through our own agents in the East. But we can get no control of the market while you Eastern men are working against us by shipping honey to commission men. "In union there is strength;" and if the East comes in and makes this exchange a national affair, we could not only command and set the price of honey in the United States, but, to a great extent, in Europe also.

□ CANADIAN PURE-HONEY LAW.

□ Mr. McEvoy sends to the *American Bee Journal* the following pure-honey bill, now before the Canadian Parliament, and which has passed its second reading. Mr. McEvoy says it will surely pass.

BILL NO. 10.

An Act further to amend the Act respecting the Adulteration of Food, Drugs, and Agricultural Fertilizers.

Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

1. No imitation of honey, or "sugar-honey," so-called, or other substitute for honey manufactured or produced from cane sugar, or from any other substances other than those which bees gather from natural sources, shall be manufactured or produced or offered for sale in Canada, or sold therein; and every person who contravenes the provisions of this

Act in any manner shall, on summary conviction, incur a penalty not exceeding four hundred dollars, and not less than one hundred dollars; and in default of payment shall be liable to imprisonment for a term not exceeding twelve months, and not less than three months: Provided that this Act shall not be interpreted or construed to prevent the giving of sugar in any form to the bees, to be consumed by them as food.

2. Section six to thirty, both inclusive, of *The Adulteration Act* shall, so far as they are applicable, be held to apply to this Act in the same way as if the adulteration of honey were especially mentioned therein.

Mr. Editor, this is decidedly the best, most direct, and sweeping law, or proposed law, on this subject that I have ever seen. You notice there is no possibility of creeping around the bush by labeling an article "sugar honey," or any other kind of honey, except the pure article produced by the bees. No imitation of honey can be made, manufactured, brought into, or sold in Canada. There is not a single State in our Union that has a law that can not be evaded by labeling it "sugar honey," or "honey syrup," so that the adulterators can carry on their rascality in open day, and in defiance of law. But this Canadian bill cuts short such a possibility as that. You can sell sugar syrup, or syrup of other kinds; but you must not attach the name of honey to either of them, or you will come to grief. I don't suppose, Mr. Editor, that *you* are going to Canada to engage in the adulteration business; but I merely put you up as a kind of target to shoot at, as a matter of convenience. This bill should be scattered broadcast over the Union, and bee-keepers should exert all their influence to get it adopted in their respective States. Hurrah for bill No. 10! Hurrah for Canada!

A NATIONAL BEE-KEEPERS' ASSOCIATION.

THE ADVANTAGES OF HAVING ONE.

By George W. Broadbeck.

Friend Root.—We have always thought well of the North American Bee-keepers' Association and of the National Bee-keepers' Union. The mere thought of the possible obliteration of either by the proposed plan of amalgamation brings with it feelings of sadness. The protective influence that has been exerted by the one, and the social privileges afforded by the other, have done much toward the advancement of bee culture in this country; yet neither of these has supplied the real and necessary demands of the bee-keepers of the United States. This very proposition of amalgamation is evidence of the need of something that does not exist. We talk of the advanced state of our industry in this country in comparison with that existing in others; but when we consider our lack of organization, aside from our State associations, is this really true? Is it not strange that, during the years that have passed, we have not recognized the need of a representative organization? Why is it that we have

been disposed to be so generous in the support of affiliated associations at the expense of home interests?

We believe that the most important interest to provide for to-day is the formation of an organization that will voice and further the bee-keeping industry of every section of the Union. We have always admired the indomitable and persevering skill of the German, and have taken just pride in the indomitable will and self-assurance of our enterprising Canadians; and, while there are many good qualities in both, worthy of emulation, is it not about time for us to develop some characteristics of our own? Why should not others emulate us?

There is not a country on the face of the earth that has more intelligent and capable bee-keepers than we have in the United States, and yet some of us have been chasing after every phantom organization that came along; and the present seems but the re-echo of the past.

Now, brother bee-keepers, let us bury the past, and try to live up to the demands of the present. There never has been and never will be a more propitious time for the organization of a national bee-keepers' association than now. You yourself, Mr. Editor, on page 147, in connection with the Hon. Geo. E. Hilton, voice the need of just such an organization. We wonder how many times in the past we have, under like circumstances, been forced to put our hands in our pockets, and whistle, "Oh! there's a good time coming," etc., when a representative bee-keepers' association would have brought about some good results. What other organization could do such work more effectively for the bee-keepers than one that would voice the sentiments of every bee-keeping State in the Union? Our only hope of raising the standard of our industry, and to secure the much-needed legislation, is by organizing along the lines advocated. We may harp on State laws from now until the end of time; but unless we bee-keepers combine and thus secure national legislation in opposition to adulteration it will avail us nothing. We can scarcely realize the possible good that might result from such a combination. The known quantity, though, ought to be sufficient to inspire the most phlegmatic person within our ranks to a willingness to do something toward the protection of his own industry. Think of the good resulting by the proper dissemination of knowledge, the more even distribution of our product, resulting in increased consumption. This is an age of progression; and it is necessary that we keep step with the procession, otherwise we shall be relegated to the rear. Our necessities say, "Begin and build to-day; build wisely, and build well;" and when we have once erected a firm foundation, to accord with our form of government, we can enlarge its capacity as our needs demand.

As a closing suggestion we urge immediate

consideration and action; and to further this project we would outline the following:

First, the selection of two delegates by each State association or assembly of bee-keepers where no State organization exists. After due time for selection of delegates, the persons selected organize, and proceed to formulate plans for a national bee-keepers' association. The work of this preliminary organization can all be conducted by correspondence, and then submitted to the various State associations for ratification and the selection of delegates to the first assembly, the place of meeting being central and permanent.

We trust now that every bee-keeper who resides in the United States will in some way give expression to his views on the subject presented. We feel assured that, if we thus show a willingness to present our cause, it will result in a double assurance to our usually wide-awake bee-editors that they are working for "the greatest good to the greatest number."

Los Angeles, Cal.

[If I understand you correctly, you and the other California bee-keepers would not object to the amalgamation of the two societies providing that the North American were distinctly national; that you think the present National Bee-keepers' Union should not be enlarged in its scope so as to cover Canada. There may be something in this. When the North American was incorporated, you may remember that some of our Canadian brethren raised a vigorous protest. If the North American Bee-keepers' Union, as is proposed, should become a fact, it of course would have to be incorporated, either in the United States or in Canada, in order to carry on the work of defense, to prosecute and be prosecuted—in fact, to act as a responsible person or firm. Obviously the Union, when amalgamated with the other association, should be incorporated in the United States.

I do not know that this point has ever been raised before; but possibly our Canadian bee-friends who objected the first time would object again. But whatever is done, I am most emphatically in favor of having the Union so modified that it shall have annual meetings or conventions, to discuss the all-absorbing problems that come before us, no matter whether they relate to defense against unjust legislation, prosecution of glucose-mixers, or whether they concern some of the problems as to how to manage bees. In other words, I am most heartily in favor of having the social annual-meeting feature hitched on to the Union in some way; and if it is not wise to have it international, let it be distinctly national.

In the event that the Bee-keepers' Union should be changed as I have suggested, those Canadians who have welcomed the proposed change in the North American could hitch on a union to their Ontario Bee-keepers' Association. In that case the old North American could be disbanded, and the two national associations could have joint meetings at stated or occasional intervals to discuss common interests, as was done so well in the old North American, and thus Canadian and American bee-keepers would be united in one common brotherhood as before. Then the work of defense, and prosecuting adulterators, could be carried on by each distinct national association in its own country. Now, please understand that

what I have said is meant in the way of *suggestion* and not as a *recommendation*. I should like to hear from others.—ED.]

THE LOW PRICES OF HONEY.

CAUSE AND CURE; THE CALIFORNIA EXCHANGE; A CAREFULLY CONSIDERED ARTICLE.

By C. H. Clayton.

It is often said that the prices of commodities are fixed by the cost of production. If this be correct, the cost of producing honey has been reduced fully 40 per cent within the last few years. But is this assertion true? I think not. The cost of production is but one of the factors governing prices, and certainly not the sole governing power. Cost enters into the value of all products, and must not be ignored; yet, at times, some other element may absolutely control for a time the price at which an article may be sold. The law of supply and demand often works an increase or decrease in prices without regard to the cost of production of the article at the exact period. A shortage in any crop brings increase of prices if the demand remains the same. A large increase in the crop, if the demand be the same, will cause the prices to fall. If the price of honey gets below the actual cost of its production, and remains so for any length of time, the production will of necessity be decreased.

Bee-keepers will not long continue the production of honey when compelled to pay out more money than they get in return for their product. The fact will curtail the production until the price obtained covers the cost. In like manner any substance that can be produced at a large profit will naturally be produced in larger amounts.

The question then arises, To what shall we attribute the low price of honey? Is it overproduction brought about by large profits? Let us see what those profits are—if any.

The capital invested in the production of honey varies much from year to year, even in the same apiary, on account of losses from various causes. The cost price of the empty hives, drawn combs, and tools used, are about the only items that can be declared to have a fixed value from year to year.

Suppose we rate the two-story hive (empty) at 75 cents; the drawn combs are, for purposes of income, well worth 75 cents each; 19 combs to hive is \$11.25; bees, say 4 pounds, which would be a fair colony at the beginning of the season, at 50 cents per pound—\$2.00. Total value of hive ready for business, \$14.00.

We will figure nothing for cost of range, honey-house, and tools. We have as yet no reliable statistics to show the average yield which may be expected from each colony. Some yields have been published, but they

have invariably been of the boom order, representing special yields in special years from special localities, and are of little value for average estimates. Years of records kept by individuals in average locations tend to show that the average annual production does not exceed 70 pounds per colony of honey, and $\frac{1}{2}$ pound of wax. I will make no account for the year of the new swarm you may get, as its value is offset by the cost of hive and combs for its use. It may be considered to be a *forced investment* which may return you a profit another year. Your cash outlay for your colony will be, for case and can for your 70 pounds of honey, say 45 cents; labor 60 cents; freight (to our average market) 70 cents, and commission 18 cents. Now let us see what we have—estimating honey at 5 cents in the market:

70 pounds of honey.....	\$3 50
$\frac{1}{2}$ pound wax, at 22.....	11
Total income, .	\$3 61
Our expenses are:	
Interest on \$14.00 at 8 per cent.	\$1 12
Cost of case and can.....	45
Labor.....	60
Freight.....	70
Commission.....	18
Total,	\$3 05

That shows a net profit of 56 cents from our colony. Your honey has cost you a fraction over $4\frac{1}{2}$ cents per pound. The honey-producers of California will not subscribe largely for the "popular" bonds now in vogue. At 5 cents per pound, the producer who gets his range free, and successfully dodges the tax-collector, will, if he produces and markets 20,000 pounds, have the munificent sum of \$130 with which to buy himself a pair of overalls and a year's grub for the wife and babies. They can all go barefooted—what's the good of shoes, any way?

question is, How are we to obtain what justly belongs to us? It is possible that, in order to help ourselves, we may have to first help the consumer. I contend that the real remedy for low prices with us is an enlarged demand. It goes without saying, that a demand far in excess of the present supply can be created by placing honey before the consumer at a price that he can afford to pay. The consumer is the poor man; the masses are poor, and the masses must have cheap food. It is said, that for every ill there is a remedy. I believe we have our remedy within our grasp. Let us establish, through our Exchange, selling-agencies for our honey in every town and city we can reach. Let the honey be packed by the Exchange to suit any market; let it be covered by the Exchange guaranty, and *be sold at Exchange prices*. Make those prices such as will afford a fair price to the producer, a fair compensation to the agent, and it surely will be a much lower price than he now pays to the consumer. When an agent tampers with Exchange goods or Exchange prices, bounce him. Sell no honey under any circumstances to wholesalers to be repacked—glucosed. If they want honey in small packages we will pack it for them, and put our seal upon every package.

Whenever any adulterated honey is found, enforce the law relentlessly against the offender. The masses must have cheap food; the laws of health demand pure food. It is within our power, by united action, to cheapen our product to them, and furnish them a pure, healthy article of food. To these ends the California Bee-keepers' Exchange has been formed, and it is to be hoped our brethren elsewhere will unite with us in the endeavor to accomplish what will so evidently benefit both producer and consumer.

Lang, Cal.

[Your points are well made; but it strikes me that your valuation of a colony and hive (\$14.00) is too large. I had understood that bees could be bought in your State for about \$5.00 on an average. The highest estimate that I remember of was \$10.00, and even this was subsequently said to be too high. Your average yield, 70 lbs., may be about right, but during the last few years it is possible that it may be a little large. But if 70 lbs. is right, then the profit on the colony would be somewhere about a dollar, providing the valuation of the colony is too high. The Exchange offers a hopeful solution of the problem of low prices to the bee-keeper and high prices to the consumer.—Ed.]

EXPERIENCE WITH COMMISSION MEN.

SOME PLEASANT FEATURES ON THE OTHER SIDE;
TRICKS OF THE TRADE, ETC.

By F. A. Snell.

My first experience with commission men dates back to 1871, since which time I have sent honey to nearly all the large northern cities to be sold on commission, and my experience has

been somewhat varied. With a few of those dealt with, my deal was perfectly satisfactory to me, and all that could be desired. After learning their standing, rates for selling, probable prices for honey, etc., the shipments were duly made; and on arrival of the honey at its destination I was informed of the fact, and in a reasonable time got my returns, and at the figures I had expected, and sometimes one or two cents more per pound, with full weights given. In dealing with others I sometimes never got all that was due me.

One season I shipped to a commission firm ten thousand pounds of comb and extracted honey, all of which was well handled for me. With other firms I have had rates for selling given me as being 5 per cent, prices also given. The shipment was made, and, after waiting some time, I would write them in regard to arrival, how it was moving off, etc. In reply I would get something in substance like this: "Yes, the honey has arrived, but it is leaking badly; kegs poor;" or, "Combs broken in several cases; honey slow sale; prices down;" yet their very quotations were standing the same as before given, in the bee-journals. Finally, after several months I would get some returns with short weights; rates for selling figured at 10 per cent, after they had given them to me as 5. Upon writing them in regard to the rate they had previously given me, or, rather, quoted me, I was informed that on shipments of \$100 or more their rate was 5 per cent, but on a less amount it was 10. Now, I consider this nothing but deception. Every firm selling honey should give its rates for selling, in a clear honest way, so that none may be deceived or wronged. The honey-producer who sends his honey to be sold on commission is at a disadvantage from first to last unless the one to whom the shipment is made is strictly honest and reliable, also experienced in his business, so that the honey may be placed to good advantage, and returns made promptly to the shipper.

I once made a small shipment of extracted honey to a dealer located in Columbus, O., who quoted higher prices than were quoted at other markets; and when I had waited for quite a long time I wrote him, and in reply I was informed that prices were lower, etc. To sum up this deal, I have only to say that I took a lower figure for a part, and the rest is yet unpaid for, and will so remain. I tried in vain for about two years to have the matter settled, but failed. Any legal action would have been folly.

Last fall I shipped ten crates to a Chicago commission firm from whom I had previously received several letters giving high quotations, and also their great facilities for selling, etc. When the returns finally came, the fine comb honey sent netted me 10 cts. per lb. I had seen his card in the bee-journals.

I could give much more of my experience with

honey-dealers, but the above will suffice. I am glad to learn than GLEANINGS is sifting out the unreliable honey-dealers; and as one of the bee-keeping fraternity I thank you sincerely for your efforts in this direction. Our bee-journals should exercise greater care in the future than has at times been the case in the past, as to who shall be placed in the list of honey commission men in their lists. A good deal of loss has been sustained by bee-keepers in the past by sending their honey to those who were not reliable. Honest reliable commission men are a great help to producers in helping them to dispose of their products; and I hope such dealers may in the future abide more by the golden rule than many have done in the past.

Milledgeville, Ill.

[Yes, indeed; the bee-journals, while they always have been careful to admit into their columns only reliable commission houses, are more strict now than ever.—ED.]

THE NORTH AMERICAN.

HAS IT "BEEN A MERE SCHOOL FOR BEGINNERS"? A REPLY TO W. F. CLARKE.

By Dr. C. C. Müller.

It doesn't matter such a great deal whether the Rev. W. F. Clarke and I agree as to the *past* history of the North American Bee-keepers' Association, so far as the past is concerned; but it may matter to discuss the past so far as it has any bearing on the *future*. And if Mr. Clarke is correct in what he says on page 52 there should be a radical change. It costs a lot of money to attend one of these international conventions; and so important is it to have the time wisely and profitably occupied that it might be well to give the matter a good deal of discussion, even to using it as a topic for a

"Owing to the preponderance of local bee-keepers, many of whom are not very well up in the business, our time has been occupied in explaining to tyros what even beginners in bee-keeping may be very properly supposed to be familiar with."

Now, these are pretty severe assertions; but it will be noticed that they are merely assertions on your part, without a shadow of proof given—no attempt at giving a single instance to prove your position. If the association has, *for the most part*, been a mere school for beginners, then the programs will contain, for the most part, such topics as are interesting only to beginners: the discussions reported will be, for the most part, those that would be instructive only to beginners. Such being the case it will be easy to cite instances, and I will ask you to refer us to a North American convention of any one year, and quote the topics for the most part, all the topics quoted being such as are of interest to beginners only. As the list of topics is never long, that ought not to be a hard thing to do. To comport with your statement, the "most part" of the discussions reported will agree with the topics, and it would be asking too much to ask you to quote a majority of the discussions; but I hope you will not consider me unreasonable when I ask you to quote five sentences in the discussions, that would be interesting only to beginners. Then when you have done that, will you kindly quote from five places in the report, showing that the information given was for the benefit of those "who would show plainly that they had never read a book on bee-keeping in their lives"? And if I may tax your patience in just one more thing, please give us, from the report of that same year, five instances where the time was occupied explaining to tyros what beginners are familiar with.

If it be too much of a tax to do what I have asked, then give us part of the desired proofs; in fact, give us any sort of proof that you have been speaking the words of truth and soberness.

You speak of dislike to thoughtful papers in such connection as to make the impression that weak papers without much thought might be welcomed. What proof for this? If there be any guilt in that direction, I come nearer being the guilty person than any one else I know of. I have thought for years that essays were of no benefit to a properly conducted convention of bee-keepers; but my objection was not specially against *thoughtful* papers, for the less of thought the more the objection.

You say, "There has always been a strongly marked dislike for . . . really able discussions." Will you give us, not five, but just one tiny item of proof for this? Name just one man or woman, who has ever had any thing to do with controlling a North American conven-

tion, who has always shown, or ever shown, a marked dislike for really able discussions.

You say, "My idea was and is, that at a representative bee-keepers' meeting we have a right to look for what we don't get in manuals of bee culture; namely, a face-to-face discussion of live questions that have arisen in the practical part of our pursuit." Just my idea exactly. Now it will be in order for you to explain to us why in all these years you never before said any thing about the things that you have so plainly seen were all wrong. What topic did you ever propose that would lift us from the elementary plane, that topic being rejected?

Will you kindly give us now a few specimen topics upon which we could have "really able discussions"? for I suppose that your objection was mainly to the topics. At the different conventions there were always some of our very ablest men. You were at some of them. Those able men gave us, I think, the best they had upon the topics discussed. Whatever may have been the program, there was always room, I think, for them to introduce other topics through the question-box.

Or, if the topics were not at fault, please tell us where the trouble was, and show us the remedy. There will be many more conventions, larger or smaller, all over the land—State, district, and county conventions. They have, no doubt, been taking the North American conventions, more or less, as models. Give them something better to model after.

Marengo, Ill.

S. I. FREEBORN.

IN THE REMINISCENT VEIN.

By Knott A. B. Keeper.

When I first knew the late Mr. Freeborn, of Ithaca, Wis., in 1868, he had about 80 colonies of black bees in Gallup-frame hives. The frames were about a foot square, placed cross-wise of the hive, about a dozen in each. The hive had movable top and bottom boards, and was very handy. His bees were allowed to swarm naturally, and required a good deal of watching during swarming time. One day he had eighteen natural swarms. I was greatly interested to see him handle them in swarming. At that time smokers had not been much used, if invented, and, as a substitute, he rags wound on sticks and set slowly burning, to produce smoke to control the bees where desired.

He had a honey-box about five inches square and a foot long, open at one end. There was a hole in the other end, through which he inserted his thumb to grasp it by. When he discovered a colony start to cast a swarm he got the box, went to a cluster of bees, put a few into the box, and held it up above his head

near the swarm coming out. It was amusing to see the bees pour into this box, and then see them dumped out at the hive where he wanted them.

One day he had five swarms clustered at once in a bunch. I helped him look them over and find three of the queens, which were each placed in a separate hive, and the bees induced to go evenly into them to form three new colonies. Then there was a final changing of the hives next morning to even up the bees, just as many bee-keepers still practice.



S. I. FREEBORN.

Mr. Freeborn, in a year or so after, obtained a Murphy honey-extractor, the first one used in our part of the country. He afterward obtained one of Novice's extractors, and these two were used by him for several years, and extracted many tons of honey. About this time he obtained some Italian queens, and began rearing that breed of bees, and soon had his apiary fully Italianized. He had some fine queens from H. Alley, and among others one from G. M. Doolittle. This was a tested queen, and cost \$5.00. After sending it, Mr. Doolittle found her progeny so good-natured and handsome that he bought her back toward the fall of the same season. Mr. Freeborn had some splendid bees from this queen. It would be interesting to read the history of her offspring at Mr. Doolittle's, and perhaps he remembers the transaction yet. This was bringing bee-keeping down to a fine point, when apiarists noted the disposition of their bees. And why not? for what terribly cross fellows some hybrids were! How savagely they would sting, and how prolific too! Then we noted how they were out first in the morning, and worked later at night than the blacks. I wonder if they behave so now.

In the fall of 1869 or '70 Mr. Freeborn and I bought of a farmer his entire stock of bees in old box hives—22 colonies. These we hauled

home on a bobsled. To prevent smothering we turned the hives bottom up, and had a merry load indeed. The hives were very heavy, and we thought we had a fine lot of stores; but, alas! it was largely bee-bread instead of honey. On account of cold weather the bees could not fly before spring after removal, and they wintered rather poorly; but next spring we transferred to frame hives, and, having plenty of comb, and a good season, soon had them in fine condition. When basswoods began to bloom I concluded to remove the queens to stop breeding for a time, and let them give their attention to storing honey, which they did in royal style. The removal of the queens, however, gave me quite an adventure. When I was preparing to do the work a young son of Mr. Freeborn, who was full of mischief, and a younger brother of mine, heard my plans, and, unknown to me, went to the hives to stir the bees up; and they did it brown. I found it out after I got well to work; but, despite angry stings, I held to the work, smoked them lively, and finished the job in a reeking sweat. Hurrying to the house I combed out about a dozen stings from my hair, and then tumbled on to the bed in a dead faint. My folks dashed some cold water on my head. That roused me as quickly and painfully as if I had been struck with half a dozen clubs. Oh how it hurt! By this time I began to turn purple and red in spots all over, and felt terribly, and for once in my life I was induced to swallow some whisky, which soon brought me out all right, but always with a regret that I had to even taste the foul stuff. Strange to say, that, ever after this, I have been unable to bear a single sting without a recurrence of the same symptoms in such a severe form as to forbid further bee-keeping by me.

NURSERY FOR HATCHING CHICKENS AND QUEENS.

HOW TO REGULATE TEMPERATURE OF LAMP-NURSERIES.

H. G. Quirin.

Can more queens be taken from a nucleus by the use of a lamp-nursery? G. M. Doolittle has an article in GLEANINGS for Jan. 15 wherein he intimates that more queens can be taken from a nucleus by the use of a nursery, but says that introducing queens two or three days old has proven an unsafe method with him. Now, I should like to ask him why he would want to keep those queens in the incubator until two or three days old. I do not think I should want to do so, even if I could make a success of introducing them to nuclei. I deem it quite essential to the longevity (or good health, if you please) of the queen, that she be introduced within five or six hours after emerging from the cell, as she does not get the exercise in a

nursery when confined long that they ought to have and do get in a nucleus. Nine-tenths of my queens have been hatched in a nursery for the past three years; but they do not remain long in the nursery, but are introduced to nuclei as fast as they emerge from the cells. Many object to the use of the nursery on account of not being able to control the temperature or the amount of fire required to maintain the proper heat. The nursery which I use does not require more than five minutes of time a week. The nursery is simply a live incubator I had built to order for hatching chickens; but it was built with the view of hatching queens also. The inside dimensions are 48x36x12 inches. It has an automatic heat-regulator attached by which the temperature can be adjusted to any desired degree; and, when once adjusted, it needs no further attention whatever for the entire season. Of course, the nursery is not an absolute necessity, but is such a convenience and saving of queens that, when you have once availed yourself of its use, and have learned to operate it thoroughly, you will never do without it.

Now, I know that there are queen-breeders who once used the queen-nursery, but who do not now use it. If I am not mistaken, some of these parties complain about controlling the temperature, and perhaps the most of them have given up its use on this account; but this is very easily overcome by means of a pair of thermostatic bars to control the heat, which can be purchased of almost any incubator manufacturer. The pair I use, and which are very simple, are sold by J. L. Campbell, of West Elizabeth, Pa., and cost \$5.00.

The advantages of a nursery are many. As fast as queen-cells are sealed they can be placed therein, and be perfectly safe—no danger of the bees tearing them down, as they will sometimes do when you have fifty or more cells in a colony; or if a virgin queen gets into the hive you will lose all your cells. Just imagine losing all of your sealed cells, with dozens of orders coming in daily! Then, too, you are obliged at times to take care of cells when the weather is too cool or otherwise unpleasant to disturb the bees taking care of the cells.

POULTRY AND BEES.

I see in an article by Mr. Ashley that he combines poultry with bees. That is just what I have been doing. In fact, I think that, without the poultry, I should give up bees. That large nursery I have told you about, with it I hatch chickens in the winter and queens in the summer; so you see it is no dead property. The chickens (or chicks, rather), when taken from the incubator, are transferred to a brooder-house 20x60, which is heated by hot-water pipes under the brooder, where the little chicks go to get warm. The temperature is kept at from 95 to 100 degrees; and, in fact, these chicks do not

get outside of the building until ready for market, which is when they weigh about 1½ to 2 lbs. each, when they are shipped to Chicago, where they command a ready sale until the middle of June, when they are shipped east instead of west.

Bellevue, O., Jan. 27.

PROOF OF A QUEEN'S PRESENCE.

TIMES WHEN WE MUST SEE HER.

By Emma Wilson.

Mr. Wood, in his article on page 891, asks why I wish to see the queen, and adds, "Proof of her presence is all that I want;" and the editor, in a footnote, says, "I never think of looking for a queen (and I don't suppose Miss Wilson or the doctor does either) when I have seen one good comb with brood and eggs properly distributed."

I beg pardon, but I still plead guilty that I very often wish to see the queen, even when I have positive proof that there is a good one in the hive. In the spring, before there is any possibility of swarming, we want to see every queen we have in our apiaries, for the reason that we want them all clipped; and although our record-book may give the record "q. cl." (queen clipped) we often find an unclipped queen in a colony the first time it is overhauled in the spring, showing quite conclusively that the bees do very often supersede their queens after the honey-harvest.

Another reason that I wish to see the queen is, that it very often happens that we wish to take a frame of brood and the adhering bees from one colony and give to another. In that case the first thing that I would do would be to find their queen and set her to one side until I could select the brood and bees that I wish to take. After removing what I wish to take from the colony I would return their queen. I never want to run any risk of taking her away, and in no way can I feel perfectly sure that I am not taking her away unless I see her.

Another reason for seeing queens is, that you may wish to requeen a colony, even when the queen is doing excellent work. I have in mind a case of that kind just now. In the Hastings apiary we had a colony of very strong and good workers; but they were very black, and, oh! but they were cross—the very crossdest bees I ever had any thing to do with. We decided that that queen would have to die. But it was one thing to say she must die, and quite another to find her. Every time I opened the hive to look for the queen those miserable bees just fairly boiled over the sides of the hive, skeddaddled off the frames like a flock of sheep jumping over a fence, hung in great clusters at the bottom of the frames, or dropped off. I'd close up the hive, and after they had quieted down I would try again. No matter if I didn't use a particle

of smoke, nor how carefully I handled them, not giving them the least jar, the same performance was gone through with. But I persevered, and one day I actually did see her racing over a frame, and promptly beheaded her. Now, this was one of the times when seeing brood and eggs would not satisfy me.

Sometimes we want to use an excluder between two stories where the queen has had free access to both, or at the time of putting on supers we may want to take away a lower story, in which cases the queen must be seen.

These may not be all, but I think I have given enough instances to show that there are times when the sight of brood and eggs is not sufficient. In the instances that I have given, proof of the presence of a queen is not sufficient—the queen herself must be seen.

Marengo, Ill., Jan. 25.

[Yes, I grant there are times when we must see the queen herself; but in the great majority of cases the seeing of a frame of her eggs and brood is all that you and the rest of us really require.—Ed.]

INFALLIBLE METHODS OF INTRODUCING QUEENS.

HOFFMAN FRAMES; THE PROPER WAY OF NAILING THEM.

By C. Davenport.

That "infallible" method of introducing queens, described on page 13, would, I think, prove a pretty safe way; but I have some doubts whether it would work in all cases with colonies that contained laying workers. Of late, when I have such colonies, instead of introducing a queen to them I introduce them to a queen by uniting them with another colony or colonies that have a queen.

A method which has so far proved infallible with me, and which I usually follow when I have a valuable queen to introduce, is to select some colony to receive her that is in pretty good condition, and has a laying queen, and then remove all the brood as well as the queen; but I leave or give them a number of combs containing some honey. I then introduce the queen by the usual candy plan; and after she has commenced to lay I return some or all the combs that were removed, which at the time of removal I give to some colony that is able to care for them a short time. I always remove all bees from the cage except the queen; for, like Mr. Doolittle, I think when strong bees are left in the cage, especially if they have come from a distance, they are sometimes the cause of the queen's being killed. But I practice the plan just described only when I wish to use more than ordinary care in introducing.

Last season, although I bought and introduced quite a number of queens, I lost only one, and she was introduced all right. I got two from you last spring; and while they were in-

troduced all right, the yellow, or five-banded one, after she had been laying for a week or ten days, suddenly disappeared. There were no queen-cells nor any being started at the time. The other one from you, which was a three-banded tested Italian, proved to be a very good one. She is prolific, and her bees are great workers. With two exceptions they outstripped every thing I had last summer; but they are not as gentle as some others I have, though they are not bad bees to handle. But for me, I do not want bees too gentle.

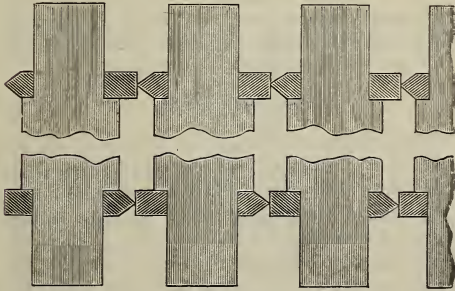
There is one disadvantage or fault in the Hoffman self-spacing frame that I do not remember of seeing mentioned. This is, however, quite a serious one, though I do not know that it could really be called the fault of the frame itself. This consists in the way in which they are nailed together. There are two ways these frames can be nailed, and either way is right; or that is, they will work either way equally well, if one never gets any that are nailed the other way. All the Hoffman frames I have were purchased in the flat, and I think I have nailed them together wrongly; for when that extractor I ordered of you last summer came, standing in one of the baskets, and this frame was nailed together the opposite way from what mine are. What I mean is this: Suppose we take a hive and place it so it will face the south. Now, if we take that frame that you sent, and hang it in this hive, the V'd edge on the south end of the frame will be on the east side of the hive, and the V'd edge on the north end of the frame will be on the west side of the hive, and this, of course, will be the same if the frame is changed end for end. Now, if one of my frames were hung in that hive, the V'd edge at the south would be on the west side, and the V'd edge at the north on the east side just the opposite from yours, though mine will, of course, work just as well as yours; but if I were to buy 25 colonies of you, or you bought that number of me, if it were ever desired to exchange these frames, or mix them up with others in the apiary, and one should wish to do this sooner or later, they would not work together; for when two of these frames that are nailed opposite ways are placed side by side, the two V'd edges would be together and the two square edges together. While the two square edges being together would not make so much difference, the two V'd edges would, if they were crowded much, slip or crowd past each other some, and thus space too close, of course. These frames are illustrated, and we are told how to nail them together, in the catalogs; but many who have never used or seen any of these frames nailed up would not think any thing about starting to nail them a certain way as long as they kept the V'd edges on the diagonally opposite sides, and nailed them all the same way they started. It is all in the way one

starts. Every one should start them the same way. But I should not be afraid to venture the assertion that there are about as many started one way as the other.

Last summer—or, rather, fall—I called on quite a number of bee-keepers, a few of whom were using these frames. Some had started them one way and some the other, and only two of them had thought any thing about there being two ways to start them that would give the same results until I called their attention to the matter.

Southern, Minn.

[When we put out Hoffman frames several years ago with those V edges we anticipated just the point you raise. And to forestall any trouble we had an engraving made that shows just how the V's should be placed. For convenience I reproduce the cut and the paragraph following it from our catalog:



In putting these frames together, be sure to have the V'd edges on the end-bars come on the diagonally opposite sides, and always put them together the same way. The cut above shows a section ($\frac{1}{2}$ size) of each end of the frames with end-bars as they should be always.

sentence, he will have his V edges nailed like ours, or so that, when the frame is held in the hands, the V edge will touch the left thumb and the square edge the right thumb.—ED.]

CHEAP HONEY IN CALIFORNIA, AGAIN.

By Wm. G. Hewes.

I was pleased to see, by GLEANINGS for Feb. 15, that the A. I. Root Co. had investigated, and found untrue, the report that our best California honey was selling here at 3 cents per lb. There has been no honey sold at Newhall for less than $3\frac{1}{2}$ cts. per lb., and that was a small lot of dark honey which had candied solid. The rest of the honey which has been sold here has brought from 4 to 5 cts. in carload lots. Some buyers have had the impudence to offer 3 cts.; but as their offers were always refused, it could never be truthfully said that 3 cts. was the price of our honey.

I see that our enthusiastic brother, Rambler, has, by a peculiar method of figuring, reached the conclusion that the honey crop of Central and Southern California amounted in 1895 to

In this locality there was about a third more honey produced in 1893 than in 1895. Not only was the honey-flow better, but there were more bees in the country; as, during the dry season of 1894, many colonies perished of starvation.

I do not think bee-keepers should assist in any way in exaggerating the size of our honey crop. The buyers work industriously enough at that. Whenever we have a crop here, in order to beat down our prices greatly exaggerated reports are circulated as to the yield in San Diego, San Bernardino, and elsewhere; and I suppose exaggerated stories of our yield is the club with which they try to beat down prices in those places.

Another club which the bee-keeper cuts for buyers to pound his head with is this talk of "water-white" honey; for of water-white honey there is none. Let any one who thinks he has such honey half fill a one-quart Mason fruit-jar with honey, then pour water on top of that, and he will see that his honey is red in comparison. Skylark is the latest to be guilty of this boast. When next he gets a honey crop (too dry to expect one this year) he must not get mad and want to blow up people if the buyer, not finding his best honey as "clear and beautiful as any water from a living spring," pronounces it second grade and wants to pay for it accordingly.

A common trick for bee-keepers who exhibit at fairs is to fill their bottles with honey taken entirely from new comb, thus making an exhibit of honey which they can not duplicate in commercial quantities, as we all know that black combs darken the honey, and in large apiaries there must necessarily be many such. If any one doubts this, let him fill with water the cells of an old black brood-comb; and when he shakes it out a day or two later he will have

found, as a rule, where the queen was allowed access to the second story, there would be several combs only partly filled with brood, and it was always more work to extract such combs than those that were full of honey; and very often such combs were not extracted at all, and for that reason I have for the past ten years used queen-excluders on all my hives run for extracted honey, with perfect satisfaction.

Wakeman, Ohio., Feb. 18.

[Mr. Danzenbaker uses in his hive a follower and wedge; and if you had used a similar arrangement in the hive you speak of, I do not think there would have been any trouble about getting out the first frame, nor any frame, in fact. The loosening of the wedge releases the follower, and then all that is necessary is simply to pry over the frame or frames.—Ed.]

PREVENTING GRANULATION.

THE GREAT IMPORTANCE OF KEEPING HONEY
FROM GRANULATING; HEATING TO PREVENT,
NOT AS FEASIBLE AS CHEMICALS.

By C. F. Hochstein.

LESS trouble to get out the first frame; and, sometimes after a rain, utterly impossible. and, as highly as I valued the closed-end standing frame, I resolved that, unless there could be some better way to get out the first frame, I should be obliged to abandon the whole business.

It was at this time that I thought of using a hive with a movable side except $1\frac{1}{4}$ inches at the bottom, which is nailed so as to hold the hive together. The movable side is clamped on by means of two VanDeuzen clamps which hold the hive practically as solid as if nailed. I have used it ever since with perfect satisfaction. This is, no doubt, a very good hive, but I think no better than the Dovetailed eight-frame, as it is too large to be used successfully as a divisible-brood-chamber hive.

On page 56 we find these words by Dr. Miller: "And for extracted honey, I'm not sure that I ever saw objection made by American bee-keepers to allowing unlimited breeding-room." I am aware that there are many producers of extracted honey who do not limit the queen; but I am not willing to admit that all American bee-keepers are in favor of any such wholesale production of brood during the harvest, only to become consumers in many locations where there is no fall honey to gather.

I know of one bee-keeper who hives his swarms in half-depth L. hives, and, after the harvest is over, drives these swarms into Dovetailed chaff hives for winter, and, by using queen-excluders over these small hives, gets all the honey in the extracting-combs, and I never saw a finer article than he produced in this way. Perhaps this is one of the problems that that can be governed only by location. My own experience has been in favor of limiting the queen to 8 frames during the harvest. I

In GLEANINGS for March 1 I see that "E. F. C., of N. Y.," asks you for the same thing that I did some time ago, and there's no doubt but thousands of bee-keepers want the same thing. You say you would not like to put any thing in honey for any purpose whatever, meaning by this, of course, you do not want to adulterate it. I do not know the exact definition of adulteration, as I have no dictionary here in the woods; but most people consider adulteration as the mixing of an inferior article with a genuine one in order to cheapen the latter. Now, in putting a chemical in honey we put it in to preserve the honey in its natural state, and not to cheapen it; so it can not come under the head of adulteration any more than any fruit or preserve you put up with sugar to keep it from getting sour, or working. We might just as well accuse you of selling us foundation made of adulterated wax, if you use sulphuric acid to take the wax out of old combs.

Now, GLEANINGS always advocates selling honey in the home market; and right here it refuses its help to a plan that will increase the consumption of honey, raise the price, and make selling in the home market easy.

You probably ask, "How will it do this?" I will try to explain. Since I came down here I met a bee-keeper with over 150 colonies, and he used this thin Florida sugar-cane syrup on his table. I teased him about it. "Oh!" said he, "I have several barrels of honey yet, but I can not bother to use it—it's all candied." This also applies to the retailers and consumers of honey. They will not bother with it if it granulates, no matter how pure it is. They will rather use sugar-cane syrup. So granulation lessens consumption. Now, if we can get some-

thing to keep it from granulating we can sell all our honey the year round in the home market, at a good price; if not, we have to ship it to one of the large markets to get rid of it at once. This glut the market, and, of course, lowers the price for all. You say, "Heat it to 180° and it will keep liquid for a year or two;" but you don't tell how to do this, nor what the expense of doing it is. You probably have big vats and steam to do it, and it comes easy and cheap to you; but I can't ruin a two-dollar wash-boiler in doing a fifty-cent wash. I don't know what I could do in heating honey up to 180 degrees.

Just give us a chemical, and we will use it and let you do the heating up. We don't ask you to use it.

Punta Gorda, Fla., March 13.

[Yes, I grant it would be a great thing if we could prevent honey from granulating, by a process cheaper than resorting to heat; but so far, I believe, there is nothing in the way of a chemical, or something to put in honey, known to bee-keepers or chemists, that will accomplish it. It was formerly supposed that glucose would do it; but I know from some tests I have made that it will not. As I have before reported in these columns, I have used corn syrup in quantities varying all the way from 10 to 75 per cent. The samples of honey containing these various amounts all granulated within a year. But even if glucose would answer the purpose, it could never be used by honest beekeepers.

I grant your point that, if we could find some chemical which, used in very small quantities, would prevent granulation, and which in the first place would be more expensive than the honey, its use for this purpose would not be adulteration. If there is any chemist or any bee-keeper who knows of some chemical, let him be free to stand up and tell us. In the mean time let me suggest to you that raising honey to a temperature of 180 degrees may not be so very expensive. One bee-keeper whom I know kept his honey two years in a clear liquid state. When extracted it was first poured into pails, these pails being afterward put into a wash-boiler containing water nearly boiling. A thermometer was used; and when the honey in the pails reached 180, by a thermometer immersed in one of the pails, it was taken out and bottled while hot. In the mean time, other pails of honey were put into the boiler of hot water, and so on the operation continued. I do not remember how much he could heat in this way in a day, but I should say not far short of 1000 lbs. But you people in Florida probably would not want to fuss with wash-boilers. If you have from 10 to 15 tons of honey it would pay you well to have a boiler made of tin, large enough to cover the whole top of the stove. This boiler could be about as deep as a common tin pail. To economize room I would suggest using 60-lb. square cans, the tops cut off, and bails fastened to them. If these bails were fastened to the corners the honey could be poured right from these cans into Muth jars, because the tipped-over corner would be a "lip," allowing only a small stream to run at a time.

Until we can find some chemical, I am of the opinion that the most satisfactory method of preventing granulation is in the employment of heat; and even if a chemical is discovered, it may not be any cheaper nor as cheap.—Ep.]



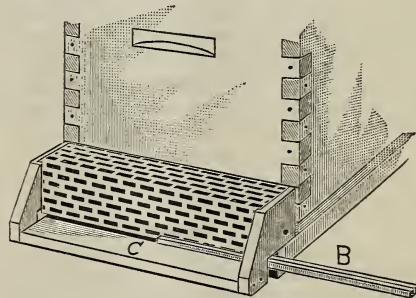
MCNAY'S IMPROVEMENT ON THE DRONE-GUARD.

By Frank McNay.

There are many bee-keepers who do not like to force their bees to work through a perforated entrance-guard all of the time, yet would find it a great advantage if they could do so a part of the time; for instance, while they are visiting an out-apiary or attending church.

I have used the common entrance-guards for this purpose, but find that it is no small task to put them in place on a large apiary, and be sure that all fit so that a queen can not escape, and then remove them so often. This difficulty has led me to invent an adjustable entrance-guard that I leave over the entrance all summer; and by means of a convenient slide under the perforated zinc I can, in ten minutes, either open or close an apiary of 100 colonies or more, so that they either pass under the zinc or through it as I desire.

When the slide is open, the guard in no way interferes with the passage of the bees; but being directly over the entrance it acts at all times as a guard against robbers. I will send you a sample to-day.



This was made to fit a hive similar to your Dovetailed hive, with a projecting bottom-board. To use it on an even-front hive like your chaff hive, all that is necessary to make a perfect fit is a short piece of common lath nailed on to pieces A A, back of slide B. One can soon rid the hives of surplus drones by opening these slides a few minutes until drones are out, then close them before they return.

Our honey crop of 1895 was greatly reduced by drouth and the severe frosts of May 12, which ruined the basswood bloom in this vicinity. However, as my apiaries extend nearly one hundred miles from home in opposite directions, lightning does not strike them all at once. Although my apiaries near home were afflicted by both severe drouth and frosts, still I secured several tons of excellent fall honey, all dark; while from those about 100 miles south-

east from home I obtained a fair crop of bass-wood honey, as frosts were not so severe there. From those farthest northwest we extracted about five tons of very white honey during the autumn months.

I will send you a sample of this lot. It was all obtained from the remnant of the noted Grimm apiaries, which I purchased after the death of Christopher Grimm, and shipped a carload to the northern part of the State in the care of Herbert Clute.

As some may infer that I have honey to sell, I will say that I have sold all of my crop, and also bought and sold about 25 tons from other bee-keepers.

Mauston, Wis., Feb. 19.

[Mr. McNay is one of the extensive bee-keepers of Wisconsin; therefore when his improved drone-trap came to hand I examined it with more than ordinary interest, knowing that he would not put any thing forth that would not have real practical merit. Not having tried it, but having tried the ordinary drone-traps, I am pretty well assured that he has made a decided improvement. To attach the ordinary drone-guard to an entrance just about the time when swarms may be expected, and the bees are well a-work in the field, disconcerts them considerably for about a day at least. The incoming workers will hover about the entrance for some time before they essay to go through. Of course, the drone-guards can be left on the year through, and avoid all this strangeness; but that compels the workers to pass through holes constantly when there is no need of it, just big enough for them to go through. Mr. McNay obviates this by drawing the slide B, allowing the bees to pass into the entrance at C freely. As swarming comes on, all that is necessary is to push in the slide, and the appearance of things is changed so little that the workers will pass into the hive as usual, without appearing to be disconcerted.—Ed.]

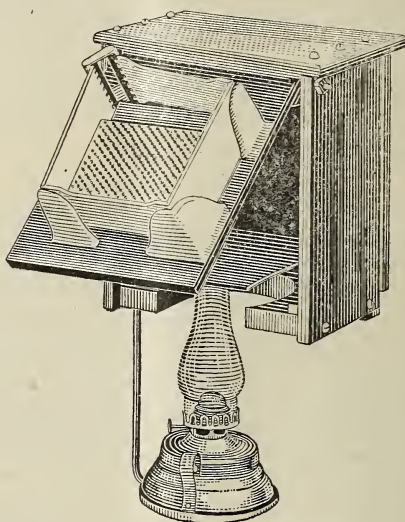
THE MAGIC SECTION-PRESS.

By James Cormack.

The magic section-press and foundation-fastener, as represented in the cut, is improved by having a handle attached to the lower margin of the door, similar to a hand-stamp, that the palm of the hand is placed on when closing the door. It is the simplest and most effective, fastest, strongest, and easiest operated, of any combined device on the market. It can't get out of order unless broken, as all of the parts are formed of malleable iron and steel; lamp-chimney of tin, with isinglass in opening to regulate the blaze. The lamp is brass; size of press, $7\frac{1}{2} \times 8\frac{3}{8}$ inches.

To operate you lay the section on the door, as shown in the etching, with your left-hand palm on the handle (not shown); close the door, which swings from the top; allow the starter, which you pick up with the right hand and place on the tablet on the door, to slide down and touch the metal tongue which passes through a slot in the door, and is warmed by

the lamp. This contact melts the wax instantly. Allow the door to swing back a trifle. The starter is brought in contact with the section; the swing of the door wipes the melted wax from the metal plate and fastens the starter or full sheets secure. The machine is fastened to a table-leaf or board by two metal clamps attached to the back of the box. It is quite an easy task to close and fasten foundation in from three to four thousand sections per day.



The lever that closes the section is hinged with a ball socket provided with rod and lever on the lower end beneath the bottom, by which you regulate the opening of the door. As soon as the work on the section is complete, the door of its own accord returns to the position as shown in cut, ready.

Des Moines, Ia.

[We have tried one of these devices, and find that they will fold sections and put in foundation; but our people can not make it work as well and nicely as the two separate machines we are using and advertising.—Ed.]



QUEENS MATING.

Question.—Do queens of second swarms "mate" before or after they lead out a swarm? I see one of our "bee-lights" says that "perhaps they may mate before going out with the swarm."

Answer.—If any bee-keeper of any prominence puts forth the claim that any queen leading out any after-swarm may mate the drone, or become fertile, before she so leads the swarms, it is something I should not expect,

and shows that he or she can not have looked into the matter very thoroughly. I have made swarming and queen-rearing a study for the past twenty years, spending hours, days, and weeks upon it; and if any queen was ever fertilized, or even flew out to meet the drone while there were other young queens in the cells, it is something I have never noticed, and something that all of my experiments go to prove never happens. All know that after-swarming comes only from a plurality of queens in the hive, and these queens are always those which have never been out of the hive at all, except as they may have gone out with an after-swarm, and been returned by the apiarist. As a rule, during after-swarming, all young queens which would naturally emerge from the cells, except the first hatched, are kept in the cells by a guard of bees which feed them through a small opening in the cell, made by the young queen trying to bite the cover off; and these queens are constantly quawking because they are kept prisoners; and the one which has her liberty is piping back in her enraged condition—enraged because the bees keep her from destroying these quawking inmates of the cells.†

□ While such a state of things as this is kept up in the hive, no queen has any desire to mate, and no after-swarming is ever conducted except under just such a state of affairs. In one or two instances, where after-swarms had been kept back for several days by unfavorable weather, and where only one queen went with the after-swarm, I have had every evidence to believe that said queens were fertilized while out with the swarm, as I saw them entering the hive with the drone organs attached to them, and they were laying two days afterward. But the rule is, that all queens accompanying after-swarms wait about their wedding-trip until they are established in their new home, when, in two to four days after hiving, on some pleasant afternoon, the bees will come out for a playspell, and the queen be seen to leave the hive to mate.

GETTING BEES TO WORK IN UPPER STORIES.

Question.—I use the Simplicity hive, and wish to know if the hanging of a frame of brood and honey "upstairs," taken from the lower story, would get the bees up and to work more quickly. I use full wired frames of foundation.

Answer.—Yes, it would in many cases; but would it not be too much manipulation for the advantage gained? The bees will follow their brood "upstairs" every time; but it does not appear to *always* get them to work more quickly, as to starting comb-building, than by other methods. The theory, that, as bees will instinctively adhere to their brood wherever it is placed, so said brood will set the bees at work wherever there is brood, needs to be taken with a degree of intelligence; for, no matter whether

the brood is kept together or separated, the bees will not go to work storing honey or drawing out comb foundation, in any part of the hive, when there is a dearth of honey; and very many do not seem to think otherwise than that the bees should be at work storing honey on every pleasant day during the time flowers are in bloom. If there were any difficulty in getting bees to work in a properly arranged surplus-apartment, when there is any thing for them to do, it would be of advantage to talk about a remedy; but my experience has been that, if there is honey in the flowers, and the weather is fine, and the brood-nest is full of brood, or brood and honey, we shall find it a difficult matter to keep the bees out of the surplus-apartment, even should we wish it otherwise, short of taking said apartment from the hive, or excluding the bees therefrom. I think all of our best practical apiarists agree that, with good average queens, a good strain of bees, proper size and shape of brood-chamber, right communications to the surplus-receptacles, bees will, without any artificial inducement, begin in the surplus-apartment just as soon as the secretion of nectar will yield any surplus. 3

FIXING HIVES FOR WINTER. □

□ *Question.*—Would it be advisable, when preparing bees for winter, to place the combs that the bees are going to winter on, in the upper story, and then place the upper story on an empty lower story? If prepared thus would not the dead bees and foul air settle to the bottom, and the warm pure air stay at the top?

Answer.—Here is a question which should have been answered last November, but was overlooked; and as the writer has prompted me, from being anxious to have a reply, I venture to thus put it in, although somewhat out of season.

There is, without doubt, some advantage in having the hives elevated a little above the usual position during winter; and if it could be done without too much work, undoubtedly it would pay. But I should not want that elevation, when the hives are on their summer stands, to be as much as the whole depth of a hive. I think that Dr. Miller has about the right idea in his reversible bottom-board—the elevation, when on the reversed or winter side, being about two inches. I think this depth better than any greater depth. I am using some of these bottom-boards this winter; and, while they are a success with Dr. Miller, I am using the precaution which I think should always be given when trying any thing new—go slow till I have proven the thing success in my locality.

If you would like to have any of your friends see a specimen copy of Gleanings, make known the request on a postal, with the address or addresses, and we will, with pleasure, send them.



FRUIT BLOOM IN FLORIDA.

There are many Le Conte and Kieffer pear-trees in this locality, and they are now white with bloom, with bees humming over them. Peach and pectarine trees are lovely in their pink garb, and all nature rejoices. Honey peaches are as large as hazelnuts, which taper to a point; but peentoes are flat, like a small tomato. These early varieties of peaches have so far escaped injury from frost.

The ti-ti is now blooming, and many other flowers, so that bees have no lack of pasture, even if the orange bloom has disappeared for the present.

MRS. L. HARRISON.

St. Andrews Bay, Fla., Mar. 14.

ANOTHER INSTANCE OF SLIPSHODNESS IN PUTTING UP HONEY.

The article by G. F. Robbins, page 171, and your editorial, page 183, on slipshod methods of putting up honey, induce me to report the following:

In the fall of 1894 I was obliged to provide my bees with winter stores. I ordered a barrel of honey from St. Louis, at $3\frac{1}{2}$ cts. When it came to hand I found that it had been an extra-fine article of fall honey, put into an old dirty whisky-barrel which, at the time, must have contained several pints of whisky mixed with charred scales from the barrel. The same honey, put up with proper care, might have easily sold in St. Louis for 6 or 7 cts. Note the difference—455 lbs. at $3\frac{1}{2}$ c= $\$15.92$. The same quantity at 6c= $\$27.30$ —a difference of $\$11.38$.

Centerville, Iowa.

G. B. REPLOGLE.

HOW TO MAKE WAX FROM HONEY.

The flavor of honey here is strong and rank. Could you tell me of a plan to turn surplus frames of honey into wax by feeding back in the late fall? That is the only time I could give the bees close attention. I have 25 colonies in 10-frame hives.

E. M.

[We have had no experience along the line you call for, and shall, therefore, be obliged if some of our subscribers in the warmer countries where wax is the principal commercial product from the hive will enlighten us.—ED.]

BOTTOM VENTILATION FOR HOUSE-APIARIES.

Last fall, when I packed the bees for winter I thought I would leave on all the wire-cloth screens under the hives in the house-apiary, thinking that the bees would winter better; but after more walking around the stairway I concluded to try only one. That one has wintered so nicely that now I wish I had left all of them on. This one colony is nice and dry, and hardly any bees are to be found on the bottom;

those that are, are small and clean. The droppings that have fallen through the wire on those below are dry and of a brown color. Hadn't you noticed that bees that are wintering nicely nearly always show this brown dust? I am so much pleased with the plan that I will leave all wire cloths under next winter. It is the same as practically taking away the bottom-boards for cellar wintering, except my bees will be left in the house-apiary.

F. A. SALISBURY.

Syracuse, N. Y., Feb. 29.

BEEES AS FERTILIZERS.

I have a nursery and market-garden and small-fruit farm. I keep bees for the purpose of fertilization. Of course, I could not give any positive facts with regard to this matter; but it is my impression that they are a benefit to the production of small fruit. But I am positive that they do not injure fruit, as I have watched them for years. We are troubled with sparrows, which will destroy grapes and other small fruit; and I have found that, after they have been picked by birds, the bees will suck the juice; and I have found sections partly filled with berry-juice, but only at times when there was a great scarcity of honey. As to the effect on seeds, I have found frequently a cross-fertilization, and of late years have always bought my own seeds for fear of this cross-fertilization.

DANIEL NOBLE.

Clintonville, Wis., Feb. 20.

BEADS FOR SPACERS.

I see in GLEANINGS, page 57, that you and Dr. Miller have been discussing nails as spacers for brood-frames. Tell Dr. M. to get some beads and put one on the nail before he drives it in. He can get beads the right size. I have never seen such a thing. If you and Dr. M. wish, you can laugh at the old Scotchman who still remains your well-wisher.

DAVID DICKIE.

Sparta, Ill., Jan. 24.

A NEW HIVE SUGGESTED.

Dr. Miller:—What possible objection could be raised against a hive $14 \times 17\frac{3}{8} \times 11\frac{1}{2}$ inside, and frame inside $10 \times 15\frac{1}{8}$, $\frac{3}{4}$ top-bar? T-tin supers of $1\frac{1}{2} \times 4\frac{1}{2} \times 4\frac{1}{2}$ will fit exactly. This will give the much-lauded compactness of brood-chamber for breeding and wintering, to my notion; capacity, 3000 square inches.

Carthage, O., Jan. 22.

JOSEPH MEYER.

[Dr. Miller replies:]

A possible (and I think real) objection is that it would be adding a hive of new dimensions, thus working against the idea of trying to hold to as few kinds as possible. Being of an odd pattern would make it a little more expensive. Other objections would vary according to the views of the objector. Those who like an eight-frame hive or smaller would call it too large, for it is nearly equivalent in size to an 11-frame

Langstroth. Dadant would think it rather small. Advocates of the ten-frame Langstroth might object that it did not give enough super surface. Some would say the frames are too deep for comb honey. Perhaps those are enough "possible objections;" but if you try it you will probably find it a pretty good hive, although not many others will be likely to adopt it. I don't figure the capacity 3000. C. C. MILLER.

Marengo, Ill.

THE CLIMATE OF WASHINGTON STATE; A
"WHACK" AT RAMBLER.

I notice an article by Rambler in which he says, in part, "An enterprising bee-keeper of Latona, Washington, has adopted the sensible plan of leaving that wet country during the rainy season, and sojourning in the salubrious climate of Southern California," etc. Now, I live in Washington, and have been in California and a good many other States, and I wish to enter a protest against his libel of our State. If Rambler would have this "enterprising bee-keeper" leave California when it gets too hot, and Maine when too cold, or some other State when he gets dried up, he would be "on the jump" all the time. The rainy season here is not so bad as some people would have you believe; and for my part I like it. We have one of the best States in the Union. I have 30 colonies of bees. I examined them on the 16th of February, and there were young bees in the hives then. W. E. DANIELL.

Sumner, Wash., Feb. 24.

HORLICK'S MALTED MILK; ITS COMPOSITION, ETC.

In regard to the composition of malted milk, would say that it consists of 50 per cent of pure fresh cow's milk, sterilized; 26.25 per cent of wheat, rich in gluten; 23 per cent of barley malt, and .75 per cent of ash and alkaline material. It is a fully cooked and partially predigested food, having a very pleasant taste, perfect solubility, freedom from any injurious or harmful ingredients, and which will supply the most concentrated nutrition in the most easily digested and convenient form. This is proven by the fact that it is used for very young children, for delicate children, invalids, and in other cases where the matter of diet is of vital importance, with the very best of satisfaction.

We are pleased to note that you have used the preparation personally with good satisfaction, so you are doubtless conversant with many of its uses and advantages. As regards its use for the grubs of young bees, we regret that we are unable to advance any opinion or advice, never having had any opportunity of testing its value for this purpose, and not knowing exactly what the composition of a proper food for such a case would be.

We have noticed one thing in connection with malted grain, and in connection with the so-called "grains" that are left after the extrac-

tion of the valuable nutritive properties from the malted grain; and that is, when exposed to the air they seem to have a great attraction for honey-bees. We think that this would show there is something in malted milk which honey-bees would have an affinity for. We hope that some of the bee-keepers will try the product, and should like to hear from them as to the success they have with it.

HORLICK'S FOOD CO.

Racine, Wis., March 12.

SECTIONS CROSSWISE OR LENGTHWISE OF THE
FRAMES.

Dr. C. C. Miller:—In running for comb honey would it be a disadvantage or advantage to place the sections *crosswise* in the super to the brood-frames? I have noticed the practice of some bee-keepers, of putting the frames in the upper story crosswise for extracted honey. Is not such practice wrong in practice and in theory? This refers to the square hives, Gallup frames, and similar hives. NOVICE.

Beaumont, Cal., March 2.

[Dr. Miller replies:]

If a hive is set perfectly level, I suppose it can not make any very great difference how the super is put on. But it isn't the easiest thing to have it exactly level, and there is some advantage in having it incline forward. That helps the bees about cleaning out. With the hive inclining in that way, I certainly shouldn't want either sections or extracting-frames to run crosswise, for they wouldn't hang level, and sections would be built to one side. In any case it seems better to have frames or sections in super running the same way as in the lower story. C. C. MILLER.

Marengo, Ill.

NUMBERING HIVES.

Requisites.—A set of brass stencil numbers, 1½ inch, 40 cents; brush and ink, 25 cents.

Stencil the numbers on your hives. If you want to change the number, and your hives are painted, a wet cloth will rub the numbers off in a few seconds; but it will stand the weather more than a year. If your hives are not painted, a few strokes with A. I. R.'s 10-cent iron plane will remove the old number. Try this. It is better than tags tacked on.

Rumford, Va.

R. F. RITCHIE.

Dr. Miller's second question, on page 163, reminds me that, in Germany, according to Rauchauss Bros., alfalfa yields no honey, even when cultivated in large areas.

Arvada, Col.

F. L. THOMPSON.

O busy bee! exalted so!

We'd work like you, we vow,
If we could loaf six months or so
As you are loafing now.

—Washington Star.



EIGHT extra pages again this issue.

IN our last issue I spoke of the fact that there seems to be a sort of apathy on the part of bee-keepers to subscribe toward the Langstroth monument fund; and Bro. York, of the *American Bee Journal*, in commenting on this, finds the same thing to be true among his readers. I can not tolerate the idea of giving it up yet, more especially as some of our friends across the water have given generously for this purpose. Surely we American bee-keepers can not afford to be outdone by friends in England and Russia. As I said before, fifty-cent and dollar subscriptions are all we ask from the mass of bee-keepers. Every dollar will be accounted for; and when the proper time comes it will be turned over to Mr. Langstroth's daughter. Some of the friends, perhaps, would not like to have their names published opposite their small subscriptions, and so we thought we would publish none.

FREIGHT RATES ON HONEY.

FREIGHT rates on extracted honey and syrup ought to be the same; but here in the East and in the South, honey is classed higher. There is no reason why the one should not go as cheaply as the other. We have been working to get honey in the class of syrup for the East, but so far have not succeeded. Bee-keepers of the South have been putting forth similar efforts. At the bee-keeping congress at Atlanta a committee was appointed to get a concession from the Southern lines. Mr. W. S. Hart, a member of that committee, writes:

I wish to say that, as a member of that committee, I have received very courteous treatment from the traffic managers, and now feel very sure that a reduction of the rate on extracted honey to that on syrup will at least be secured over lines in this State. I sincerely hope that the rest of the committee, and all parties interested, will do every thing in their power to secure this reduction for the whole South and West through the meeting in Washington to be held next month. W. S. HART.

Hawks Park, Fla., Mar. 17.

WHERE SHALL THE NEXT NORTH AMERICAN BEE HELD?

Again we want to suggest the experiment of following the G. A. R. encampment this year. As the Grand Army meets in St. Paul in September, and that city will be pretty well crowded then, we think that Minneapolis would be the proper place. All could get round-trip tickets to St. Paul, and then a small street-car fare would take them to Minneapolis in a few minutes more. It seems to us this plan is worth trying, as the railroad fare will be only *one cent a mile* at that time.

While we know that it was practically decided at the St. Joseph convention that the North American in 1896 should go to Lincoln, Neb., still we also know that those good western people are willing that the

success of this year's meeting shall not be prevented by holding the North American so strictly to its pledges in a matter of this kind. Doubtless some other year, and that very soon, the G. A. R. will meet in Lincoln or Omaha; and then, if we find it a good thing to follow it around, there will be such a big meeting of bee-keepers as will simply astound our Nebraska friends, although accustomed to big things.—*American Bee Journal*.

The President of the North American says he is agreed, provided the Nebraska bee-keepers are. It seems to me that, in view of the grand opportunity of *one cent a mile*, they surely will be agreed also. One reason, yes, the main reason, why the North American has been so poorly attended at its various meetings is because of the railroad fares. Here is the only chance to get low rates.

THE TOUGHNESS OF THE NEW-PROCESS FOUNDATION.

WHEN we made foundation by the old process, dipping in short lengths and running through the mills, we trimmed the sheets by hand with a sharp butcher-knife around a form to regulate the size of the sheet. In making foundation by the new process, the sheeting is not only turned out automatically, but the trimming and piling up is done automatically also. Very recently, having an odd-sized order for the new wax, we had occasion to do considerable trimming by hand. It was then we discovered that this kind of sheeted wax was very much harder to trim. Women used to do the trimming by hand of the old dipped wax; but if we did not have the automatic machinery for trimming our new-process foundation, it would probably be necessary to have a good strong man, with good big arms and a large butcher-knife. "Why," said one of the women, as she trimmed by hand a lot of the new foundation, "this wax trims *ever so much* harder."

Recent tests in Florida having shown that the old dipped foundation was five times more liable to sag, it is not surprising that the new wax should trim so much harder.

GRADING HONEY; CO-OPERATION OF BEE- JOURNALS.

ON page 32, in the *Review*, Mr. Hutchinson, in commenting on what I said on page 222, says:

In 1892 the North American, in its meeting at Washington, still further "revised" this grading and adopted it. Since then the *Review* has kept this grading at the head of its market column, and it is printed on the blanks sent out to dealers for their use in giving quotations, and quotations are given in conformity with that grading. The editor of GLEANINGS suggests that we take up the Miller grading and use it, and says that GLEANINGS stands ready to co-operate with any of its cotemporaries. Good! But why adopt the grading of a private individual (unless it is better) when that adopted by the leading bee-keepers' society of this country has been in use three years by one journal, and during that time not one criticism has been made by dealers or shippers? If that adopted by the North American has any faults, let them be pointed out and have them corrected at its next meeting; but don't encourage the use of different sets of rules for grading, and thereby bring in "confusion worse confounded."

Since Mr. Hutchinson has called my attention to it, I have carefully compared the two gradings side by side; and I must confess that the one he uses, adopted by the Washington North American, has the advantage in point of brevity. It also has another important advantage—that it has been tried, as Mr. Hutchinson says, three years, and “during that time, not one criticism has been made by dealers or shippers.” This is a big point in its favor. In order that our readers may more easily compare the two, I reproduce the Miller grading and the Washington North American grading side by side.

WASHINGTON.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark. That is, there will be “fancy white,” “No. 1 dark,” etc.

The reader will readily see that the Washington is briefer, and really covers all the Miller grading does, with the exception that it allows for no No. 2. The editors of the bee-journals could easily hitch on such a number if such should be necessary.

□ Now, then, it does not seem to me that we need very much discussion. What we need now is *action* on the part of bee-journals. If a majority of the others agree, I am willing to commence with the Washington North American grading, and put it at the head of our Honey Column, the same as Mr. Hutchinson has been doing. Why do I select the Washington? Because it has been tested three years, and the other has not been tested at all; and because it really covers all that is set forth in the Miller grading. I believe that most of the commission men who have furnished us quotations have also furnished them for the *Review*. That being the case, they could easily adapt themselves to the grading used in the *Review*, in GLEANINGS.

If all the editors fall into line, the system will be practically universal; and thereafter shipper and buyer can designate their honey by this grading. No doubt it will save a good many jangles, and a good deal of descriptive matter regarding honey that now is necessary. What say you, brother-editors?

MILLER.

FANCY.—All combs straight, white, well filled, firmly fastened to wood on all four sides; all cells sealed; no pollen, no comb, nor travel stain.

No. 1.—Wood well scraped, or entirely free from propolis; one side of the section sealed with white cappings, free from pollen, and having all cells sealed except the line of cells next the wood; the other side white, or but slightly discolored, with not more than two cells of pollen, and not more than ten cells unsealed beside the line of cells touching the wood; the comb fastened to the wood on four sides.

No. 2.—Three-fourths of the total surface must be filled and sealed; wood well scraped of propolis.

No. 3.—Must weigh at least half as much as a full-weight section.

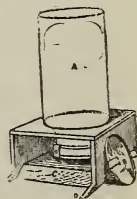
For the classes of honey I would suggest the four already in use, sufficiently understood from the names alone; namely, LIGHT, AMBER, DARK, MIXED.

SPRING FEEDING A LA BOARDMAN: HOW TO GET ALL THE HONEY OF THE FIELDS INTO SURPLUS.

ALTHOUGH this subject was quite fully covered by our friend Mr. Boardman in our columns a few months ago, it seems, from the number of inquiries that are pouring in, that the matter is not perfectly understood yet, and perhaps it might be well to give a few additional hints, with a little repetition, perhaps, along at this time, especially since this kind of feeding will need to be begun now in two or three weeks.

In the first place, the syrup should be made by mixing sugar and water in equal proportions. You can use heat to dissolve the sugar if you prefer, but I do not think it is necessary. Pour the sugar and water, equal parts, into an extractor-can, and turn vigorously for a few minutes.* In half an hour or so you will find a clear limpid syrup ready to draw off from the honey-gate of the extractor into those glass jars of the Boardman feeders.

I believe it is unnecessary to explain this feeder, which I believe is the best adapted for this kind of feeding. It permits of the syrup being fed a little at a time, and when the feeders are empty they can be seen at a glance, without opening the hive or disturbing the bees. In almost a minute's time it is possible to tell what feeders are empty in an apiary of 75 or 100 colonies, just by glancing down the rows, and walking rapidly across one end of the yard. For spring feeding, at least, an entrance feeder, especially Boardman's, is altogether the best.



A great many write, asking if it is necessary to feed, providing the hive is fairly well supplied with stores. Not so necessary; but if you wish to carry out the Boardman idea as I understand it, it would be advisable to feed all the colonies. Those that have a good supply already will be stimulated by the feeding, and, as a consequence, commence raising a lot of brood; and that means a host of young bees and a lot of honey later on in the season, if there is any to be had. Even if the bees are fairly well supplied with stores, they won't rear brood any thing as they do when a fresh supply is coming in every day. Of course, the colonies that are well supplied do not require as much syrup as the others that are running short. But suppose the combs are stored and the brood-nest will permit no more. Such combs of sealed stores taken out and set aside will come in play for winter.

Perhaps you may argue, “What is the use of buying syrup to feed bees in the spring, when

*If you haven't an extractor, use a tub and a stick.

they have already enough to carry them through till the honey-flow?"

"Enough"—there's the point! If they have just barely enough, the bees will scrimp and economize in some way, to make their stores last; and the only way for *them* to economize is to cut down brood-rearing—very poor economy for *you*, certainly.

"But," you say, "if I feed the bees a little every day, the hives will be crammed full of syrup, and I shall be out of pocket to the extent of several barrels of sugar."

What of it? You will be a gainer in the end by having a large force of bees to gather the honey if it *does* come; and then when that time arrives, it will be shoved right into the supers, because there will be no room for it in the brood-nest. The honey from the fields will bring a higher price, and you have made a first-class trade—sugar for honey. More than all, your brood-combs will be filled with the very best of winter stores—much better than honey stores, and much cheaper. And suppose you *are* out of pocket several barrels of sugar. Suppose you have fed 1000 lbs. of sugar syrup, costing you, say, 4 cts. per lb. (when ripened), and suppose you get in exchange 1000 lbs. of honey. The latter ought to bring, if clover or basswood, from 8 to 9 cts. Clearly, then, you have made a profit of at least 4 cts. per lb. on the syrup, or an aggregate of \$40.00 on the trade, because the honey would have taken the place of the sugar syrup in the brood-nest.

□ As Mr. Boardman well says, the farmer thinks nothing of feeding his stock, expecting to get returns. He who would say he could not afford to feed his hogs well because the grain that he would feed them would cost money, would be considered a fool indeed.

In view of the poor honey years that bee-keepers have been having of late, and in view of the further fact that what little honey has come in has just about filled the brood-nest, and no more, leaving little if any surplus, it would look as if Mr. Boardman's idea of substituting syrup for honey, and *pocketing the big difference* in price between the syrup and honey, was simply utilizing good business sense.

One year when I called on Mr. Boardman, he had quite a crop of honey. He had been feeding, as I have above explained. His neighbors round about him did not feed, and did not get any surplus honey. I firmly believe that many of our bee-keeping friends can just as well be getting a little surplus, and a little money for it, as to be going ahead on the old plan of getting no surplus, and nothing but bees in fair condition for winter. But suppose a big honey-flow *does* come, and you have followed Mr. Boardman's method of feeding; your hives are filled full of sugar stores, and capped over, and just fairly boiling over with bees. It is perfectly evident you are going to get a big crop of

honey that year, and *all of that honey will be surplus.*

One of my warm friends in Canada has written me, earnestly protesting against feeding the bees as Mr. Boardman does, clear up to the time when honey is coming in. He insists that, as soon as bees begin to gather from natural sources, they will crowd some of the sugar syrup from the brood-nest up into the sections or surplus combs. I have talked with Mr. Boardman on this very point, and he is very certain that, as he practices feeding, it is not done. I have also talked with other prominent bee-keepers, and written for the private opinion of others. All seem to feel that there is but little danger to be apprehended from that source. But we will suppose that my Canadian friend's point is well taken. To be on the safe side, then, stop feeding within a week or two of the expected honey-flow. If the stores in the brood-nest are capped over, there certainly can be no possible danger of the syrup's being carried above.

Taking the matter all in all, Mr. Boardman's idea of feeding offers the best solution of the problem as to what we are going to do with short honey seasons—in short, what will enable us to get *all* the honey there is in the field into *surplus* without wasting any of it in brood-rearing.

BENTON'S BEE-BOOK—A 20,000 EDITION; HOW TO GET A COPY.

THE following letter is just as hand, and will contain, I am sure, very welcome news to those who have been desirous of securing a copy of that unique bee-book published by the Department of Agriculture.

Dear Ernest:—Will you kindly inform your readers that Senator Burrows' concurrent resolution as amended has passed both branches of Congress, and is now in the hands of the printer? This provides for the publication of 20,000 copies of "Bulletin No. 1, on the Honey-bee;" 15,000 of these will be distributed by Members of Congress, and 5000 by the Department of Agriculture. This Department informs me they have over 2000 applications on file now; and as soon as it is known that another edition is to be published they will be deluged with applications. Bee-keepers should apply to their Senators and Members of Congress; and should their allotment be exhausted their letters will be sent to the Department. This is essential for two reasons—it will relieve the Department of Agriculture for a time, and will impress upon Congress the magnitude of our industry, the appreciation of the bulletin, and the appreciation of their efforts in behalf of their constituency.

Fremont, Mich., Mar. 16.

GEO. E. HILTON.

Congress has felt as it never did before the influence of bee-keepers all over our land; and even if we get nothing more than this one edition of the book, the effect will be such that in the future our representatives in Congress will know that we are not a mere handful; and, as Mr. Hilton well says, it will impress upon Congress the magnitude of our industry. Personally I feel like throwing up my hat and "hollering" "Hip, hip, hurrah for the bee-keepers of the United States!"



Not to be ministered unto, but to minister.—MATT. 20: 28.

Some time last fall, when the nights were cool, a farmer was returning home after having disposed of a load of produce in the city of Cleveland, some 25 miles away. His home was but a few miles from the town of Medina, among the hills of Hinckley. Down in a hollow between two great hills there is a spring and a watering-trough. It was after night; for in order to make the trip, one has to start very early in the morning, and return late in the evening. Our friend got off his wagon to uncheck his horses to let them drink; and as he was chilly he was striking his arms across his chest to get warm. The watering-place is out of sight between the hills, and I believe there is no dwelling near. Now, while he was occupied as I have described, somebody came up from behind, knocked him down, or threw him down, rifled his pockets, and escaped in the darkness. I believe they got between twenty and thirty dollars. The man was a farmer. Without question, he had been having the same difficulties that all the rest of us have had to contend with during the past year—severe drouth, and then small prices for the small crop that was secured by unusual pains and labor. I do not know what his product was that he took into the city, but it could hardly have been potatoes, for he would not have received so much money from even a very large load of potatoes. This money may have been needed to pay his taxes. Perhaps he rents a farm. If so, it may have been a part of the meager result of his hard labors during the past season, and needed to pay the rent. Perhaps his wife and children were depending on the money for necessary food and clothing. Who could have the heart to take a farmer's hard earnings, without rendering an equivalent? I have sometimes wondered how business men can have the heart to drive a *hard bargain* with a farmer; and I confess that I have more than once paid *more* for their produce than I could really afford, because I felt sorry for them. It is enough to sadden one's heart to witness occurrences that are going on in almost every neighborhood, to say nothing of reading the reports of crime that fill our newspapers, indicating there is a large class of humanity who have so little heed or care for the rights of others. Now, I am not going to take the ground that the world is *all* bad, for it is not true. A great majority of our people mean to be fair and upright in deal—that is, they mean to after a fashion. Sometimes they are biased by prejudice; sometimes they get contrary and wicked because others have wronged them; but to one who is looking for glimpses of the noble and Godlike and true, they will always be found. A great many times they will be coming up unexpectedly. Yes, every little while we see glimpses of that Christlike spirit that is embodied in our text—"Not to be ministered unto, but to minister." That is, there is a great amount of that trait in humanity whose foremost thought and anxiety is not *self*, but the general good of humanity at large. Oh how I do love to see that spirit! Something turns up, and one neighbor says to another, "There is your chance, John. Why don't you go ahead and make all you can out of it?" John replies, "Yes, there is a chance, and I

should be very glad indeed to avail myself of it were it not that it is going to cut off the bread and butter, or inconvenience some other poor fellow." But let us go back to our story.

I do not know who the person was who knocked that farmer down and robbed him of his hard earnings. They did not get him to put him in the county jail; or, at least, if they did it was for some other offense. He is probably at large; and as he succeeded without detection, he is ready for another job of the same kind, for this is the sad result, dear friends, of letting the criminal go unpunished. To tell the truth, there *has* been a second attempt at a similar thing in that very neighborhood.

Let us consider for a moment the state of the man's heart who did this deed. Although I have talked with great numbers of criminals, I do not know that I ever found a man so base and low and inhuman as to undertake to *defend* himself in doing an act like this. I have seen quite a good many who claimed it is all right to rob a *rich* man. They would say, "He has more than he needs, anyway; he could not have come by it honestly, or why should he be so rich and I so poor?" and similar excuses; but I have never talked with anybody who even tried to excuse himself for knocking down and robbing a *poor hard-working* man. Quite a few have admitted they did it, but that it was done (at least so they said) while they were intoxicated. Whisky obliterates every spark of humanity. Very likely, highwaymen fortify themselves with liquor before committing crimes of this kind; but if this *is* true, they must admit a heart so depraved that it could coolly and deliberately *plan* such robbery. There are those among our readers—a very few—who call my religious enthusiasm a sort of craze or hobby of mine; but I think that even these people acknowledge it is a grand and praiseworthy hobby, where it leads one to devote his life to the thought embodied in our text—"Not to be ministered unto, but to minister."

Every little while nowadays, some one says there are too many people in the world; there is not room for them all. My friend, there *is* wide room—room for the *untold thousands* who feel that their mission is "not to be ministered unto, but to minister." Perhaps you wonder why I am taking up things so directly opposite. I am doing it to show you the contrast. The highwayman deliberately tramples upon every thing Christlike. He puts under foot every humane thought. He says by his acts, "I do not care if this man *did* earn the money honestly by the sweat of his face; I do not care if he *is* poor and needy; I do not care *how* hard he has worked, nor how patiently he has deprived himself of the comforts and necessities of life. He has got some money in his pocket, and I am going to *have* it, right or wrong. If he is stubborn and unmanageable, I expect to *kill* him if I can not get his money otherwise. I do not care for retribution. If they catch me and punish me, I shall have to take it, for I am going to have his money *anyway*."

The thought has often occurred to me, "What do these men do with this money after they get it—the money they are willing to barter soul and body for? Is there any comfort or satisfaction possible to such a one? Does he enjoy his food, or is there any enjoyment in drink, and in the indulgence of the lower sensual appetites?" Then, again, I wonder, is a man ever converted to Christ Jesus after he has gone down to such depths? Does he ever turn round and devote his life toward our text—"not to be ministered unto, but to minister?" Bad men of almost all kinds have been reformed and converted. I should be glad to know if

there has ever been such a thing as a converted highwayman. What shall we do with people of this class when they are brought to justice? When a man deliberately murders an innocent, unoffending person, just to get his money, is there any other or better way than to put him out of the world by legal process?

What wonderful capabilities there are in human progress, both upward and downward! We stand *appalled* when we witness such depths of wickedness as the human heart is capable of planning. Again, we stand appalled when we see how willingly and cheerfully some unselfish soul gives his life for the good and safety of his fellow-men. We are led to rejoice and feel *proud* of humanity when we see with what alacrity great numbers of people, scattered far and wide, spring to the relief of the suffering Armenians. Then we are appalled at the crimes and iniquity exhibited by some *other* child of humanity that lives right next-door neighbor, perhaps. How shall we lessen crime, and increase the Godlike spirit? The work in both directions is a slow process. The highwayman gets bad by degrees, little by little. The missionary who risks his life to save others, probably got to be a missionary by slow degrees. It may not be profitable to spend very much time in asking *how* sin comes into the human heart. We may easily satisfy ourselves that there is only one *great remedy*. It comes from Him who spake the words of our text. There may be other agencies that are helping; but so far as I can see—so far as God has seen fit to give me a glimpse of this vast universe as it is—I can see but one *cure* for *sin*. It is Christ Jesus—it is the encouraging and developing of the spirit that he brought into the world. The children who are taught in their infancy to love that beautiful thought, "Not to be ministered unto, but to minister," how useful and valuable they become! and herein is the only real happiness—that of being self-sacrificing. The man or woman who goes about every day taking delight in looking after the comforts and wants of others is happy all day long. They are the ministering *angels* here on earth.

Dear reader, you are standing in this great throng. Perhaps you stand midway between the two extremes. What is the great inspiring thought of your life? Is it *self* or other people? What kind of example are you setting? While I utter these words I ask myself the question, "A. I. Root, what kind of example are *you* setting?" And my conscience troubles me as I review the life I am living. I *do* enjoy ministering to others, and I do enjoy being a *servant*. I am *proud* of the name servant. It is *my* name. I tire myself out every day in service—mostly in service for *others*; but yet in many things I am *selfish* still. I feel ashamed to be obliged to acknowledge that it is terribly hard work for me to put off my daily meals or my daily sleep, in order that I may minister to the comfort of somebody else. When it is somebody I *love*, it is not so *very* hard, of course; but the Master says, "Do good to them that *hate* you." Sometimes I do this, and I always feel happy after doing it, but it is hard work. These glorious texts seem away up above my head. I have to reach up and *climb* up out of selfishness into that self-sacrificing spirit.

I wonder if, among our readers, there are many whom the world classes as "hired girls"—girls or women who are employed to help the mother do the housework. I do not know how it is in your neighborhood, but almost everywhere I go there is much complaint because they can not get girls to "work out." Such as they do get do not seem to fill the want exactly. Their spirit does not seem to be along in the

line of the text—"Not to be ministered unto, but to minister." I am afraid some of the *mothers* are not exactly in a line with the text either. By the way, when somebody tells you there are *too many* people in the world, just remind them that there is a great vacancy right here. There is an unceasing and constantly unfilled demand for women helpers—for skillful, neat, cheerful, careful girls to do work. They need not necessarily be girls, either. I have known women of fifty who were real treasures in a household—household *angels* you might almost call them, and there is room for thousands upon *thousands*. Our little text sums up the great unfilled want—ministering angels. Well, we will not demand *angels* just now, for probably we can not get them (wouldn't appreciate them—*wouldn't know it* if we had them); so we will say ministering women or girls—those who come into the home to minister—that is, to wait on the people, and do whatever is to be done, and not to be "waited on" themselves. The true Christ spirit will fix it all with both mistress and maid. Shall we not, then, each and all, study more earnestly that pure and unselfish life in the book that God has given—the spirit that will help us to live with the inspiring ambition, "*Not-to-be-ministered unto,—but—to-minister.*"

Health Notes.

HEALTH FOODS AT A VERY LOW PRICE, ALL READY IN YOUR HOMES.

Friend Root.—Wheat grits, Pettijohn's food, etc., unless cooked for a long time, say three or four hours, are hard to digest, as any one can tell.

The Franklin Mills entire-wheat flour, made into a gruel or thick mush, and cooked half a day, will digest much easier than any of the so-called breakfast grains. Where the stomach will stand it, a handful of dates will make it very palatable, or a little cream over it. This is much better than milk for weak stomachs, as a general thing.

I find that apple sauce is easier to digest than any other fruit; but it must be run through a colander to make it fine. Each one will have to find out for himself what fruit agrees best. I can digest prunes easier, also, if made very fine.

Zwieback, if ground in a hand-mill, is just as good as granola, and much cheaper. It can be used in a multitude of ways. Cooked with milk it is fine. A pudding can be made with it and apples, which is nearly as good as "apple pie," by paring and quartering the apples, placing in an earthen dish, and covering with soaked zwieback, as above, and then baked till the apples are tender. Dates or raisins can be added as desired.

A. F. AMES.

Claremont, Va.

After reading the above I sent to our feed-store for two quarts of their very best wheat. The cost was *five cents*. We ground it rather fine through a large-sized coffee or spice mill—one that we use in the store. This was cooked several hours, as directed above; and I am happy to say that, after using it a week, I can not see but that it is just as good as any of the health foods. The cost is only a little over a cent a pound for the raw meal. The wheat was first carefully picked over, then washed until the water could be poured off perfectly clear. It was then dried and ground. I feel sure the coarse particles of bran are, in my case, an advantage rather than a detriment. It was first cooked to a sort of mush, sliced up when cold, and warmed up in the oven before being put on the table. Of course, I used it with my beefsteak, taking at each meal twice as much lean meat, perhaps, as of the vegetable food. Now, here is one of the very best health foods. Perhaps it stands at the head, or close to the head, in the way of a vegetable

diet, and the cost is almost insignificant. The suggestions in regard to making home-made granola, especially where the housewife has unoccupied time on her hands, are also quite an item. Of course, these readily cooked food-preparations are a great advantage where the mother of the home has her time all occupied, or where saving money is not so much of an object. In one of my former articles somebody understood me as saying that I would place zwieback next to lean beef, and ahead of other lean meats. Not so. So far as my experience goes, and with the majority of people suffering from indigestion, I would place lean meat of all kinds far ahead of any vegetable food. Then comes the zwieback, the mush made of ground wheat, or whole-wheat flour, etc.

HOW TO GET UP A DELICIOUS SUPPER IN FIVE MINUTES, AND AT A VERY INSIGNIFICANT COST.

Have bread and milk for supper. Do you say that is old? Well, hold on a bit. Substitute, for the bread, zwieback made of whole-wheat flour, and scald the milk; then break the zwieback into it while it is smoking hot. You see I am getting so I can use milk once more; but Nature seems to say, "Take these good things a little at a time to commence with. Go slow, and don't clog the machinery."

HEALTH THROUGH BREATHING.

Mr. Root:—Let me contribute a mite for the benefit of your readers, especially for those of weak lungs. It is, to urge the cultivation of our breathing powers. This seems necessary when we consider that not one person in ten is in the habit of using an eighth of the breathing capacity with which God has endowed us. I will recommend a plan, free of all cost, and at no expenditure of time, for it can be practiced when not otherwise occupied, either sitting or standing, better when out of doors. Fill the lungs full of air through the nose (just here let me say that it is not healthy to breathe through the mouth; the nose was made for respiration, the mouth for eating and for speech). Draw in a full inspiration, and let it pass out slowly through the almost closed lips. Repeat this several times through the day, and follow it up every day as often as is convenient, and you will be surprised how the air goes down into all parts of the lungs; and if you are not dressed loosely about the waist, you will find that your clothes are preventing a full respiration, and consequently your blood will not be fully oxygenized and purified as it should be, and your health will suffer ultimately. Practice this, dear readers, and recommend it to others.

Hammonton, N. J.

A. H. VAN DOREN.



CHEMICAL FERTILIZERS; CAN WE AFFORD TO USE THEM IN CONNECTION WITH STABLE MANURE IN OUR HIGH-PRESSURE GARDENING?

A few days ago I propounded the following to our Ohio Experiment Station:

Friend Green:—I want to plant about an acre of Thoroughbred potatoes this season, and I want to make the biggest yield possible, regardless of expense. Now, you know something about our rich ground. Will it pay us to use commercial fertilizers in addition to what we have already? As I expect my crop to be worth from \$5.00 to \$10.00 per bushel, I can afford to fertilize heavily, even if it does cost me money. I have already tried nitrate of soda, but can not see that it does any good on our grounds, neither do strong ashes have much if any effect. Prof. Thorn once said that our clay soil had already

potash enough. Guano and stable manure, especially when lime is also used, produces a prompt and unmistakable result every time. I don't believe I should want to try mixing my own fertilizer. I have been thinking of getting Mapes' special potato-manure. Could you or some of your people advise me briefly?

You see, our rich creek-bottom land has already been filled so full of stable manure that it will grow 300 or 400 bushels per acre of potatoes; and from the experiments I have made I felt doubtful as to whether even the potato-fertilizers would produce any result worth mentioning, although I remember to have seen big results from the use of these same fertilizers during my visit at the Experiment Station, Wooster. Below I submit their reply:

Mr. Root:—In reply to yours of the 12th, asking my opinion as to the probable profit in the use of chemical fertilizers on potatoes on your rich soil, I must say that I think under the circumstances you will find profit in using them freely—at the rate of 1000 pounds per acre, or more. We have often said that here at the station we did not get the money back which was expended for fertilizers; but for all that, the fertilizers have always increased the potato crop, when the right kind was used. This has been true, no matter how rich the soil. Now, I am confident that you can, by the use of fertilizers, increase the crop 20 to 30 per cent, even on your rich soil, and this will pay with the variety which you intend to plant; but it might not with any kind which you had to sell at ordinary market prices.

In order to put the matter in a nutshell I submit the following propositions, deduced from the results of our experiments on four distinct classes of soil, some of the work having been carried on for more than five years:

1. Nitrate of soda alone has never increased the potato crop.
2. Potash, in different forms, has sometimes given an increase, but not always, and has never paid for itself when used alone.
3. Superphosphate, in the form of dissolved bone black, acid phosphate, and odorless phosphate (basic slag) have always increased the potato crop, even on the richest soil.
4. When a mixture of the three ingredients above named has been used, the increase has been greater than with superphosphate alone.
5. The cost of the increase with superphosphate alone has usually been 5 to 7 cents per bushel; but the greatest profit per acre has usually been when a combination of the three elements was used.
6. Thus it appears that, although superphosphate is the ruling ingredient, the other elements are needed in connection with it; and this seems to be more especially true as the quantity of superphosphate is increased.

I believe that you would find profit in using 1000 pounds per acre of Mapes' potato-manure; but that a mixture of your own would be cheaper and perhaps better. Five hundred pounds superphosphate, 300 pounds nitrate of soda, and 200 pounds of muriate of potash, would cost about \$33.00 per ton; and for your soil it is as good as anything that I can suggest. If you were to add to this 200 or 300 pounds per acre of tankage it would be still better, because the latter is slower in acting than the nitrate of soda. Why not mix your own fertilizers? It will pay, and you are more sure of getting what you want. If you investigate the matter you will surely be an advocate of home-mixed fertilizers.

We do not wish to injure the business of the manufacturers of fertilizers, but we should not do our duty to the farmers if we did not tell them what we know to be facts; and it is a fact that it will pay them to do their own mixing, unless they use very small quantities.

W. J. GREEN.

Wooster, O., Mar. 14.

□ The above gives me an idea that I never got before; namely, that, while nitrate of soda and potash used alone on a crop may give no benefit that can be perceived, the two (singly or together), when used in connection with some other fertilizers, may be important and valuable. Some years ago I made a heavy application of Mapes' special potato-fertilizer, and har-

vested a great crop of potatoes; but as I found out they used, in preparing this article, chemicals that my soil did not need, I was prejudiced against using it. With the many cares I have already on my hands, I presume I shall use the Mapes fertilizer again this season; and I shall be sure to have some test rows, without any application whatever, that I may see what benefit I can get from it.

MAULE'S THOROUGHbred POTATO AT THE OHIO EXPERIMENT STATION; TESTING NEW POTATOES, ETC.

Mr. Root:—On page 152 of GLEANINGS, in speaking of Maule's Early Thoroughbred potato at the Ohio Experiment Station you make the following statement:

"The Thoroughbred is 357 bushels, besides being almost as early as the Early Ohio; and it seems a little singular that they do not make more of a stir about it in their comments."

In my remarks regarding this variety, which you quote on a preceding page, you will see that I state that we tested it one season only, and in a small way. The fact is, we had fourteen hills only—not a very large piece of ground on which to make much of a "stir." If the variety should turn out to be as good as it promises to be, I shall be glad to praise it more highly; but with the meager facts which I now have concerning it I do not feel warranted in saying more than has been said. It often happens that a variety does well one season and poorly the next, even on the same soil; and small plots are notoriously untrustworthy. Suppose that the soil where we had this kind planted was just a little richer than the average of the field, or that we made a slight mistake in weighing. Since we had to multiply the yield of our small plot by 874 to get the rate of yield per acre, it will be seen that a very small variation or error becomes exceedingly large after the calculation is made. A variation of a single ounce to the hill makes a difference in the result of nearly 13 bushels per acre; and it is conceivable that the variation from the normal might have been greater than that, and we not able to detect the difference in the soil. Ordinarily we make our plots the $\frac{1}{16}$ of an acre in size, and duplicate them besides, thus reducing the possible error to a very low limit. The limit of error in small plots is so large, and one season's trial so untrustworthy, that I have often thought it might be better if our reports were withheld until we get the evidence of at least two seasons' trials and the average of several large plots.

It seems best, however, after taking all things into consideration, to give out the results at first; for the results of our trials are simply to be taken as evidence, which is to be put alongside of evidence secured by others, before a correct verdict can be rendered. The final verdict is to be rendered by the public after sufficient evidence comes in. We can not settle the status of a variety; we simply help to do it; and the difference between our work and that of outsiders is that we are unbiased, and perhaps a little more careful than the average potato-grower.

Now, Mr. Root, please remember that we are working for the public, and that by far the greater part of our constituency consists of growers or buyers, while the originators and dealers are comparatively few.

It might help to increase sales somewhat if we were to make more of a stir about promising new varieties; but in my opinion the public gains more than it loses by not buying very heavily of new varieties until they are proved, and the price is reduced to a reasonable rate; hence it is our duty to be conservative, and not to bestow praise until we know it is deserved. It is better to err on this side than on the other. W. J. GREEN.

Wooster, O., Mar. 16.

Friend Green, in my remarks I did not think of criticising our Ohio Experiment Station. On the contrary, what I had in mind was right along in line with your remarks. I rejoice that we have men in such important positions as this, who are careful and conservative. Of course, I was not aware that you had only 14 hills. I am very glad indeed that you have given us this little insight in regard to your work and reports.

SCABBY POTATOES

I have a small quantity of choice seed potatoes that were grown in an old pasture, and in one particular spot in the field the potatoes were somewhat scabby. I should like to know if it is safe to plant such seed without treating it. What is the best way to treat such potatoes to prevent scab in the expected crop? Tubers are nice and smooth, excepting some from this particular portion of the patch. This strip ran crosswise of the rows, and every variety was diseased on this part of the ground. The varieties are Mills' Prize, Stanley, Monroe Seedling, and Freeman. The last I got of you. Arlington, Neb., Feb. 21. G. M. WHITFORD.

Most surely you should treat your scabby potatoes with corrosive sublimate. Dissolve 4 ounces in 30 gallons of water. Wash your scabby potatoes thoroughly, then put them in a coarse loose sack and immerse for two or three hours in the solution. Take them out and dry them, and they are ready to plant. But even this treatment will not secure clean potatoes on the same strip of ground you mention. You probably will have scabby potatoes there again unless you devote the ground to some other crop for two or three years. The only way to kill the scab fungus in the ground, that I know of, is by the use of sulphur, say 150 lbs. to the acre, or about 1 lb. to every square rod. This was first suggested by the *Rural New-Yorker*, and the results of careful experiments have been recently given in one of the experiment-station bulletins. Sulphur costs about 2 cts. a pound by the barrel. While some varieties of potatoes are much more liable to scab than others, it appears from your experiment that almost any variety will be scabby if planted on scabby ground. Potatoes that contain no scab, or that have been treated as above, planted on ground that has always been free from scab, are apt to be smooth. But you are liable to start the scab fungus by the manure used. If you feed your scabby potatoes to the cow, and then spread your cow manure over your ground, you are apt to have scab of the worst kind all over where the manure was spread.

MAULE'S EARLY THOROUGHbred IN THE GREENHOUSE.

We now have potatoes as large as goose-eggs, but a good many of them are injured a good deal by being nipped by the frost; and then, to add to the damages of the frost, I made a blunder by letting them get too dry. The tops began to turn yellow, and they showed signs of ripening up. I thought it might be want of moisture, so they were watered several times; but it seems I did not water them enough. They are in one of the middle beds 6 feet wide and about 20 feet long. This bed is boarded up from the paths about two feet all around; so you will notice this gives it a big chance to dry out. Well, during these March days it has dried off faster than I thought for. When I tried soaking the bed with water, running it on until the water ran through into the paths, then I found out what the matter was; and we have now the handsomest potatoes in the greenhouse, both tops and tubers, that I think anybody ever saw. Some of the tops are fully two feet high, and of a beautiful bright green (untouched by insects of any kind), that is enough to delight the eye of any potato-grower. Many are now budded, all ready to blossom. We expect them to be ripe in time for outdoor planting. We propose to make every potato commence to sprout before we plant them out in the field.

SETTING THE GLASS IN OUR CHEAP HOT-BED SASH.

In one of the agricultural papers I saw the idea of using clay to bed the glass, instead of putty. This, of course, is for the kind of sash

where the glass slides in grooves. Make up your sash, give them one or more good coats of paint, but be sure that the grooves are clear before the paint dries. Running a soft stick around the grooves the last thing will insure this. Now slip in the glass; but instead of using putty to make them tight so they will not rattle or leak, use fine yellow clay mixed up with water. The clay had better be dried, pulverized, and sifted well to get out all the coarse sand and foreign matter. Now make it into a smooth putty with water, and bed your glass. The advantage is this: If a glass should be broken, you can slide all of the lights below it up so as to take the place of the broken one, and put your new light in at the bottom. The repairs can be made, you see, in less than a minute. Where you have glass broken as much as we do, I tell you the above is quite an item. Of course, the glasses are to be butted together, not lapped; and after using several hundred sashes made both ways, for ten or fifteen years, I am ready to say I never want any more lapped glass on my premises, either for greenhouse, cold-frame, or hot-bed. For a greenhouse where the glass is set in the rafters, I would use liquid putty where the glasses abut together.

SPINACH UNDER GLASS.

We are just now getting 20 cts. per pound for Bloomsdale Extra Curled spinach grown under sashes. Now, this is one of the easiest plants, if not the very easiest, to grow under glass. In fact, it almost winters over in the open air, if it gets well rooted, and almost ready to send up a seedstalk the fall before. Under glass it will stand almost any amount of cold, and more heat, even, than lettuce. It is almost entirely exempt from insect-enemies and blight. It can be grown under the sashes when they are not used for any thing else; and a nice crop can be grown without any bottom heat from manure or steam, if it is started early enough in the fall so as to be just right to go under glass when severe freezing weather occurs. I think it will winter safely at 20 degrees, without any covering at all. That grown under glass is much more tender, and brings a better price, than that wintered in the open air.

SACALINE, THE GREAT FORAGE-PLANT.

Last year, if you remember, it did not amount to very much. This spring, along in February, one of the plants in the greenhouse waked up and sent up two great lusty buds. It made me think of that bamboo poem on page 814 of last year. The plant stands now a couple of feet high. Some of the leaves are nearly as large as your hat. If it keeps on pushing up, we shall have to take some of the sashes off the greenhouse just above it in the course of two or three weeks.

KAFFIR CORN.

So much interest has been lately expressed in regard to this plant that I have taken pains to read up reports in regard to it. It is one of the non-saccharine sorghums, and has been before the people for quite a number of years; but of late we seem to be getting at just the places where it is valuable. In a good corn-growing locality there may be but little use for it; but in the dry regions of Kansas and Missouri it promises to be of considerable importance. Below we give a report from one who has grown it quite extensively.

The plant has given great satisfaction here. It is a grand forage-plant, and will produce a crop in soil too poor for Indian corn. It should not be planted until the ground is warm—about the season for watermelon seed to go in. Its growth is rather slow at first, and, if chilled, it is apt to be seriously set

back. The red Kaffir is commonly considered to yield heavier than the white. With us the yield was about even of the two varieties. We had a remarkably fine crop of each.

For poultry it is the finest kind of feed. It has a good effect on the plumage, rendering it glossy and abundant. It is likewise excellent for all kinds of stock, especially when ground, as it then digests more thoroughly.

B. W. HOLDEN.

Emporia, Kan., March 6.

THE BEST VARIETIES OF TOMATOES FOR CANNING-FACORIES.

D. Cummins, proprietor of the Lakeshore Canning Factory, Conneaut, O., in answer to an inquiry, writes as follows:

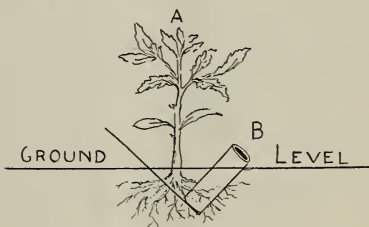
Mr. Root:—We have tried some of the new varieties of tomato seed, but consider our Trophy better. We have endeavored to improve the latter by selecting each year the finest specimens only, and from this selection we grow annually about half a million plants which are distributed among the farmers growing tomatoes for us. Also the farmers growing their own plants get seed from us. Under these conditions it would not be possible to guarantee every seed absolutely pure, as a few farmers sometimes experiment with other varieties, and without taking extra precaution to prevent mixture; besides, we have an idea that bees will help to mix varieties, even if grown half a mile apart. We are well satisfied with tomatoes grown from our seed, and are quite sure the variety will please the grower anywhere.

D. CUMMINS.

Conneaut, O., Mar. 20.

SUB-IRRIGATION ON A SMALL SCALE.

The following will enable you to test sub-irrigation on a few plants, and see whether you can make it work. If it does, you can have tiles laid under ground so as to water a larger tract by letting in the water at one place or several places as you may think best. If I am correct, plenty of water will control pretty much if not entirely this whole trouble with rot among tomatoes.



SUB-IRRIGATION ON A SMALL SCALE.

The above cut shows how I watered our tomato-plants during drouth last summer. A represents a plant; B, common drain-tile, $2\frac{1}{2}$ inches, inserted as shown, on north side of a plant, at the angle shown. We don't want the sun to shine in at the mouth of the tile. Now pour in water, and see if they don't grow. Our experience is, that tomatoes require a great amount of water. I water plants each alternate day, giving about two quarts to each plant. This plan is not practicable for a large plat; but for a small garden it is a success. I used it on both tomatoes and cabbage; and, notwithstanding the worst drouth I ever saw, I raised a fine crop of tomatoes. I raise Fordhook Early and Matchless.

Carrollton, O.

FRANK J. FERRALL.

POINTERS ON RAISING HUBBARD SQUASH.

Do not plant too early—from the 1st to the 10th of June. The more you plant, the less the big black bugs will trouble you; that is, have enough for you and the bugs too. Do not be afraid to plant a five or ten acre field, as they pay as well to feed as any crop, and what you sell usually bring a good price.

Newly cleared land is the best for them, as it does not take so much manure, and the fresh land seems to just suit them.

F. S. CLARKE.

Hastings, Mich., Mar. 11.

SHIPPING APPLES AND POTATOES IN THE MIDDLE
OF WINTER; HOW TO GUARD AGAINST
FROST AND DROUTH.

Mr. Root:—The barrel of potatoes arrived this morning after being out 26 days, and through a cold storm, in the best condition I have received potatoes from any seedsmen; and I am fully convinced that the best and safest way to ship either apples or potatoes from the North to the South, in cool weather, is to pack them in a tight barrel, well lined with paper. The reason is in accord with the laws of nature; and that is this: The potatoes or apples coming from a colder climate, hence being cooler, will, on coming to the warmer region, sweat (so called); but it is the warm air entering the package; and, the contents being cooler, it will condense, making the contents wet, hence rapid decay. But when the package is nearly air-tight it enters very slowly, so that the contents of the barrel become of the same temperature as the surrounding atmosphere, so there is very little moisture condensed, and the apples or potatoes arrive in almost the same condition as when put up.

I often receive a few barrels of apples from my Indiana friends; and when the barrels are tight, and well lined with heavy close paper, they arrive in fine condition. I am fully convinced that, if those shipping apples and potatoes south whenever it is cooler north than south, their shipments would arrive in far better condition if in air-tight barrels; and I hope you may give this a thorough test; and if you so desire, let the readers know the truth of this statement, and the natural reasons for it. I do not think such packing during warm weather would be advisable, although nature's destroying element is the oxygen of the atmosphere; so we can the fruit to preserve it from contact with this destroying element.

In the fall of 1870, in Indiana, I had my apples put in as tight barrels as I could get, headed up tight in the orchard, and removed to the cellar when danger of freezing came, and I never had apples keep so late in the spring, so sound. JOHN CRAYCRAFT.

Astor Park, Fla., Mar. 5.

SO MANY KINDS OF POTATOES.

Our Ohio Experiment Station has given us another very valuable bulletin, No. 65, on potatoes, comparison of varieties, fertilizers, etc. At present I shall mention only one of the many good points they make. Among the many new and valuable kinds there are quite a good many strikingly alike. For illustration, the Rural New-Yorker is so much like the Banner, I am afraid I should never be able to distinguish one from the other. And both Carman No. 1 and No. 3 are also a type of the specimens mentioned. The New Craig is still another very much like the four just mentioned, in size, shape, and manner of growth, except that the Craig is a little on the red order while the other four are white. Mind you, we do not claim that they are all *exactly* alike, but a good deal so. Now, our Experiment Station has made groups of potatoes that are much alike. For instance, group A comprises the Banner, Carman No. 3, Harvest King, Peerless Jr., and Rural New-Yorker No. 2.

Group C includes Early Ohio, Everitt's Six Weeks, Ohio Jr., and King of the Earliest.

Group E is Salzer's Earliest, Stray Beauty, and Bliss Triumph.

I want to say a word just here about the Stray Beauty. Last summer, when our farmers just began to bring in a few early potatoes, a man showed me a small lot of Stray Beauty. I had never seen them before; but they were so handsome I bought him out in just no time. I think they were the very first potatoes of the season I had seen, grown in our county; and as I looked at the lot standing on the sidewalk I said to myself, "If I had originated that potato, so early, so nice-looking, with that dark rich ruddy skin, I should be just happy;" and I was thinking about planting the whole creek bottom with the new early potato, the Stray Beau-

ty. I do not know but I lay awake that night thinking about it; but when we had some for breakfast next morning, and found they were watery, and not very rich, I changed my mind. I suppose they were dug before they were ripe. But we have varieties of early potatoes that are mealy and luscious, even if they are only half grown. A few days afterward another man brought in some much larger white potatoes that he called Burpee's Extra Early. These were so much nicer for a table potato that the red ones soon got into the background, and would not sell at all. When the same man brought another load of Stray Beauty I did not make him any offer for them at all. Now, the question is, Did these folks at the Experiment Station try the Stray Beauty and Bliss Triumph for table use when only half grown? Two potatoes may look exactly alike; but when you put them on the table there may be a big difference in quality. Notwithstanding, the idea of grouping our potatoes so we need not necessarily have so many kinds (a good many of them almost exactly alike), is a most praiseworthy undertaking. We have now five or six kinds almost exactly like the Rural New-Yorker No. 2. Are they really much better?

CRIMSON CLOVER DURING THE WINTER OF
1895-'96.

At this date, March 27, our crimson clover has stood the winter, and especially the intense hard freezing and alternate thawing of March, almost without injury. The piece that was put in with buckwheat in July is almost a perfect stand. It is the greenest and prettiest piece of clover I ever saw in my life at this time of the year. That sown among the early corn at the last time of cultivating, about the first of August, looks almost as well, but the stand is not as good, and so on clear up to that which was sown up into September. The earlier it was put into the ground, the better is the stand. All that we sowed during the month of August will probably make a fair crop; but where it was sown as late as September it will hardly be worth bothering with. Of course, our extremely dry weather in the fall may have had something to do with it. We may rejoice in this: Crimson clover will stand the average winter of Northern Ohio when the seed is sown in July or early in August. When our patch gets to its best we propose to plow it under so as to get a place for our Thoroughbred potatoes. With the present high price of hay, it seems almost wicked to plow under such a crop of green feed. Of course, the great point is that you have a heavy stand of clover on your ground in nine or ten months after the seed was put in.

Special Notices in the Line of Gardening, Etc.

By A. I. Root.

THE WHITTAKER POTATO ONIONS.

See page 752, Oct. 1 issue. These have wintered splendidly in the open air, no protection, and no mulch of any kind. We can furnish the same variety for *spring planting*, postpaid by mail, at 80c per quart.

KAFFIR CORN, OR NON-SACCHARINE SORGHUM.

We have just received a shipment of seed direct of this new fodder plant, from sections in Kansas where the seed is grown by the carload. Price, 1 lb. by mail, postpaid, 15 cts.; peck, by freight or express, 40 cts.; ½ bushel, 60 cts.; bushel (56 lbs.), \$1.00.

BLUE VITRIOL AND PARIS GREEN.

So many have wished us to purchase these chemicals for them, in reply to our suggestion in our last

issue, we have made arrangements to furnish them as follows: Blue vitriol (sulphate of copper), 4 lbs., 25 cts.; 50 lbs. or more, 6 cts. per lb.; barrel, 450 lbs., 5 cts. per lb. Paris green is such unpleasant stuff to handle that we prefer to sell it only in original packages. These are put up securely, and may be shipped without injury, as follows: 4-oz. packages, 7 cts. each; ½-lb. packages, 12 cts. each; 1-lb. tin cans, 22 cts.; cans holding either 2 or 5 lbs., 20 cts. per lb.; 14 lbs. at 19 cts.; 28 lbs., 18½ cts.; 56 lbs., 17½; and 100 lbs. at 17 cts. per lb.

TROPHY TOMATO SEED; A CHOICE STRAIN AT VERY LOW PRICES.

Those who have read our tomato-book will notice that friend Cummins, of the Lakeshore Canning Factory, still uses a special strain of the well-known Trophy. He obtained his seed from Col. George E. Waring, about 25 years ago, and each season he has been selecting seed from the very best specimens. The consequence is, that their own strain of Trophy suits them, for their canning work, as well as or better than any of the new varieties. Well, just now they have finished planting seed for the season, and have some of the seed left of their selected strain. We have purchased 5 lbs. of this; and as we got it low in consequence of its being a little late, we offer it, to any who may want it, at the very low price of 10 cts. per ounce, or 75 cts. per lb. If you want only a five-cent package to try it, we will give a big lot of seed for 5 cts., under the circumstances.

SWEET CORN AND PARSNIP SEED GROWN IN 1894.

The Stowell's Evergreen and Mammoth sweet corn that I offered at \$1.00 on page 154 is all sold out. We have a splendid lot, however, of both kinds of the 1895 crop, at \$1.75 per bushel; five or more bushels will be sold at \$1.50 while the stock lasts. We have, however, a nice lot still left, of the 1894 parsnip seed at 10 cts. per lb. By tests made in our greenhouse it germinates just about as well as the new seed. We think one reason is, it was grown on very rich soil; the seeds were unusually large, plump, and heavy. If you sow it middling thick, with the intention of thinning out to get an even stand, we think it will answer every purpose of the 1895 crop; and I shouldn't be surprised if it would produce better results than a good deal of the seed in the market, harvested in 1895.

PERUVIAN GUANO.

You may remember that I have often said the only commercial fertilizer that gave us prompt and sure returns was the real Peruvian guano—the raw material before it had been tinkered up or improved (?). For two years past we have been unable to find just the article we wanted. We have now, however, found some that suits us very well. The analysis furnished with it is as follows:

Ammonia, 4.14%; phosphoric acid, 23.76%; potash, 3.09%.

You will notice in the above that the principal ingredient is phosphoric acid; ammonia and potash are small. Well, our Medina clay soil does not need potash; in fact, ashes produce little or no effect on most crops; neither does nitrate of soda seem to do any good; but the guano makes a quick and prompt showing every time. By the way, if you do not do some experimenting with it until you learn how, you will be very apt to kill your stuff by overkindness—that is, getting in too much or not having it thoroughly mixed with the soil in your plant-beds. We always put it on with a fine sieve (a Hunter sifter, for instance), and then rake the ground thoroughly after sifting it on the surface. Peter Henderson's rule used to be to sift it over a smooth level bed until it made the surface snuff-colored; then rake it in 2 or 3 inches deep, and you are all right.

We can furnish this guano to any one who wish to try it, as follows: 1 lb., 5c; 5 lbs. or more, 4c per lb.; 25 lbs. or more, 3½c per lb.; 100 lbs., \$3.00; 200-lb. bag, \$5.00.

SEED POTATOES APRIL 1.

As we have made some additions and some changes, we submit our list of seed potatoes once more. As our first ten barrels of Maule's Early Thorobred are practically sold out, we have succeeded in getting five barrels more; but if you want them you will have to order quick. Maule tells us the stock will last only two or three weeks longer, and our five barrels will probably be gone

before planting-time—at least, after we have reserved enough for planting one acre for our own use.

Season of maturing in order of table, the first named being the earliest.

NAME.	1 lb. by mail.	3 lbs. by mail.	½ peck.	Peck.	½ bushel.	Bushel.	Barrel—11 pk.
White Bliss Triumph	\$ 20	\$ 50	\$ 50	\$ 90	\$1 50	\$ 2 50	\$ 6 00
Early Ohio	15	35	20	35	60	1 00	2 50
E. Thorobred, Maule's	1 00	3 00	3 00	5 00	7 50	12 50	25 00
Burpee's Extra Early	15	35	20	35	60	1 00	2 50
Freeman	15	35	20	35	60	1 00	2 50
Lee's Favorite	12	25	20	35	60	1 00	2 50
New Queen	15	35	20	35	60	1 00	2 50
Monroe Seedling	12	25	20	35	60	1 00	2 50
Beauty of Hebron	12	25	20	35	60	1 00	2 50
State of Maine	12	25	20	35	60	1 00	2 50
Sir William	15	35	20	35	60	1 00	2 50
Rural New Yorker	12	25	20	35	60	1 00	2 50
Carman No. 1	15	35	20	35	60	1 00	2 50
Carman No. 3	40	1 00	40	75	1 25	2 00	4 50
Irish Daisy	12	25	20	35	60	1 00	2 50
Mammoth's Enormous	40	1 00	40	75	1 25	2 00	4 50
New Craig	20	50	50	90	1 50	2 50	6 00

Second size of Lee's Favorite, New Craig, and Freemans (other kinds sold out) will be half above prices. Above prices include packages for shipping. Potatoes will be shipped at once soon as order is received, so long as our stock holds out.

A full description of each and every one of the varieties will be mailed free of charge on application.

SEED SWEET POTATOES.

As there seems to be much inquiry in regard to seed sweet potatoes for bedding, and as it will soon be time to put them out, we offer them as follows: By mail, 1 lb., Yellow Jersey, 20 cts.; 3 lbs., 50 cts.; by express or freight, ½ peck, 50 cts.; peck, 90 cts.; ½ bushel, \$1.25. The vineless yam or bunch sweet potato, 1 lb., by mail, 25 cts.; 3 lbs., 60 cts.; ½ peck, by freight or express, 60 cts.; pk., \$1.00; ½ bu., \$1.50.

THE BUNCH YAM, OR VINELESS SWEET POTATO.

This new plant is being boomed to such an extent through many of the catalogs and advertisements in the agricultural papers that I feel quite a little uneasy about it. It certainly will not succeed in all soils and in all localities to the extent the advertisements claim for it. We have tried it on our ground for the last two seasons; and while we have had some very nice potatoes or yams, it has not proved a great yielder—perhaps because my soil was too deep and rich, and they went too much to tops instead of tubers. One of the earliest to introduce it in the South, Mr. C. C. L. Dill, of Dillburgh, Ala., claims there are two distinct varieties. The first he calls the bunch yam; the next, the Spanish bunch sweet potato. From his circular we extract the following in regard to

THE BUNCH YAM.

They are early and prolific, over 400 bushels having been made per acre, and 200 is often made on thin land. The bunch yam will make on land too poor for almost any other crop. Still, the best results can be obtained only on good land and with good cultivation. For the table, our people (or, at least, a majority of them) think them superior to any other variety. They are sweet and juicy, and every hundred pounds of these potatoes contain over fourteen pounds of pure cane sugar.

Then he has the following in regard to

THE SPANISH BUNCH SWEET POTATO.

This potato originated in South Florida; and while ninety-nine out of a hundred Southern people will say the bunch yam is much the best eating potato, the one who does like it is enthusiastic over its good qualities. Northern people prefer it to all other kinds; and, as a mark of their esteem, have named it "Gen. Grant." It is three or four weeks earlier than the bunch yam, a lighter color, and the vines with me were more inclined to run. In size and shape it resembles the bunch yam very much.

From the same circular we take the following directions in regard to raising the plants:

Dig a trench three or four feet wide and three feet deep; lay old rails or poles in the bottom, and then fill up with

*The entire crop is at present controlled by Wm H. Maule. We are not at liberty to sell them for less than the prices he has put on them as above; but we will present a pound, postage prepaid, free of charge, to any present subscriber of GLEANINGS, for each new subscription he sends; we will also send GLEANINGS one year to every person who buys one-half peck of the potatoes. If you purchase a bushel you get GLEANINGS for eight years, either sent to yourself or to eight different persons, as you may choose.

leaves or pine straw, which must be wet, and then covered two feet deep with dirt. On this put raw cotton seed to the depth of six inches, and put as much more stable manure on the cotton seed. On this put six or eight inches of leaf mold, sandy loam, top soil from the woods or fence corners, and, if nothing better can be obtained, dry sand will do. On this, bed your potatoes. Do not let them touch each other and cover with two or three inches of the same light soil. Never put clay or any stiff soil over or under your potatoes, unless you want them to rot. They must have a porous soil to give them air. Make your bed two or three weeks before you bed out your potatoes, to give it time to go through a sweat, and settle.

Now, I can not say which of the two is the better. We can furnish potatoes for bedding of either of the above at the prices given in our last issue; and we expect to be able to have plants to send out by the first of May. This is as early as will do to put them outdoors in our locality; and the middle of May would probably be safer. Better try all these new things on a small scale first; and as you make a success of them, then, enlarge your field of operations.

Plants and potatoes can be ordered of us or friend Dill.

THE BICYCLE: ITS CARE AND REPAIR.

The above is the title of a little book written during this present year, 1896, by C. Von Culen, Delaware City, Del. It gives the most sensible and rational directions for riding, and for the care of a bicycle, of any thing I have ever yet got hold of. It is illustrated by any number of pictures; and I think that every man, woman, or child who is able to own a bicycle should have the book and read it thoroughly. The price is 25 cts.; but we will send it postpaid by mail to any of our subscribers, whose time has not yet run out on GLEANINGS, for an even 15 cts.; to other people, postpaid by mail, 25 cts.

PREPAYING FREIGHT AND EXPRESS CHARGES IN ORDER TO SAVE OUR CUSTOMERS DELAY AND LOSS.

Every little while something comes up making it necessary to prepay charges on goods in order to get them through to destination. Sometimes connecting lines refuse to receive them until they have their pay in advance. I presume this is occasioned because stuff of little value is very little while left at the express or freight office. The consignee refuses to pay this. A few days ago a good brother somewhere down south wrote that he sent a dollar to the Battle Creek folks for their health foods. He ordered the goods by express. When they got away down to his place the express charges were more than the value of the stuff. He wrote me he had refused to receive them, and did not seem to be aware that he was doing any thing out of the way. A good many people seem thoughtless in regard to such matters. Suppose you set a man to doing some work for you, without saying any thing in regard to what it will cost. Suppose that, after it is done, because it costs more than you expected, you refuse to pay the bill, and go off and leave work on his hands that is of little or no value to anybody but you. Why, any one who has any degree of respect for right and justice would say you must pay the bill, and be more careful next time, and find out the probable cost before setting somebody at work. Now, ordering goods by express, without asking your agent what the probable expense will be, is exactly like the above. Your only way is to pay the bill and take your goods. If you think the price exorbitant, ask the express company to look the matter over and make it right if it is not right. Let us now go back to where I started.

In order to get goods through to the friends who are waiting for them we often hand over the cash to the railroad or express companies. It may be 50 cents, or it may be \$5.00. Of course, the owner of the goods did not authorize us to do so; but perishable stuff would forbid waiting long enough to ask him about it; therefore, for the sake of accommodation we advance the money. As a rule we get thanks for so doing, and the money comes back promptly. Once in a while, however, we find somebody who will not even make any reply to us after we have in this way advanced good money" to save him trouble. Such a person probably reasons thus: "I have got my goods all right. The express companies had all they ought to have, before he made the advance, and he did it without my authorizing him to." Now, where the book-keepers bring me accounts of this kind I am sometimes tempted to say, "I think that, hereafter, we will not pay any

more bills for anybody until we are authorized to do so. If their goods are held by the express companies until they are spoiled, they must bear it as best they can." After I cool down a little, however, a better spirit comes up and says, "No, no, that won't do. You are following Him who said, 'Not to be ministered unto, but to minister;' and you know that, a great many times, he never got even a word of thanks. And, again, he said, 'Do good, and lend, hoping for nothing again.'"

Dear friends, I have written this because I thought may be if I gave you this view of it some of you would be a little more ready to help me bear my share of these burdens and losses.

ELECTRICAL QUACKS AND FRAUDS.

We copy the following from an article in the *Evening Post*, of New York:

No fraud on the public can be more contemptible than the obtaining of money for quack nostrums from the sick poor, for it is from that class that the professor of impossible cures gets the largest number of victims. The application of electricity gives opportunity for a large amount of such quackery. Undoubtedly electricity plays a part in the legitimate practice of the healing art; but even there it is by no means yet fully determined under what circumstances and conditions it is best applied. People have been led by the marvelous advances in the commercial use of electricity to believe any thing of its agency, in medicine and in business. Electrical brushes, belts, and the like are offered to a credulous public with a belief that the new name will win purchasers regardless of real merit.

The same listlessness on the part of the public which permitted such a disgraceful exhibition of quackery at Chicago allows the sales of such worthless so-called electrical appliances to continue. It is not complimentary to our American electrical press that, so far as it has come under our notice, *Electricity*, the only journal which has denounced these electrical swindles with any warmth or in any detail.

To all of the above we breathe a most emphatic amen. Pass it along, brethren of the press, until this shameful work is put down.

A LITTLE STORY WITH A BIG MORAL.

We clip the following bit of wisdom from the *Rural New-Yorker*:

In a popular restaurant of this city, hundreds of people eat dinner or lunch during the noon hour. The food is always clean and well cooked, and the waiters are polite and attentive. Apparently the business would run itself almost without a hitch; yet all through the hour the proprietor stands where he can see every table, and notice any mistake or evidence of dissatisfaction. The people who work for him are the best of their kind, yet they can not help doing better work when they know that the master's eye is constantly on them. The mere fact that the proprietor stands there without saying a word, but eyeing every detail, gave confidence to patrons, and made the waiters more careful than they would otherwise have been. Many a farmer loses money by leaving important details to others. No matter how painstaking or careful they may be, they do not feel the responsibilities of ownership, and they need the restraining influence of the master's eye, which as the old saw has it, "makes the fat ox."

There, friends, is that does not hit you it does me. I have never found any business in my life that would prosper unless I kept my eye on it; and this applies most particularly to market-gardening. The presence of the proprietor, and the fact that his eye is constantly looking over every detail, makes all the difference between profit and loss. This applies not only to growing the crops but to selling the product. Of course, I can not follow our wagon in its daily rounds; but unless I know what is put on the wagon in the morning, and what is brought back at night, day after day, the business is sure to suffer. When I say this I do not mean to blame our boys and men; but in the nature of things the owner, the boss and proprietor, must have all the different lines in his fingers. If a wagon-load of something is to be delivered somewhere, he alone can tell better than anybody else whether there is not a load of something or other to be brought back, thus saving steps. This morning some Freeman potatoes were to be carried over to the house, for table use. Right where the man unloaded his potatoes were two huge baskets of agricultural papers to be carried away. He saw them; but, without orders, of course he went back with his empty wheelbarrow. Later in the day a man had to be sent with the wheelbarrow on purpose for the papers.

Now, this thing, or something like it, is occurring continually. If the owner is where he can have his eye on all that needs to be done, sometimes he can in a few minutes, by a combination of circumstances, save time, money, and heavy lifting. Two men may be passing each other. By stopping both,

and speaking half a dozen words, a dollar may be saved. When I was a juvenile I was greatly pleased with a process in mathematics called cancellation—swapping off, as it were; and this the boss should be doing continually in his business. If he has not brains enough to avoid sending a team or even a boy on a long trip with an empty wagon, and then making the same trip again to carry something in the same direction, because nobody thought of it, he had better stop being “boss” and “hire out” to somebody.

THE BEE-KEEPERS' ARMENIAN FUND.

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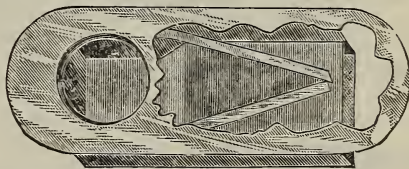
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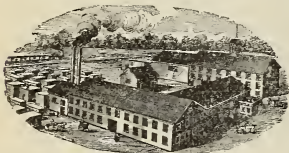
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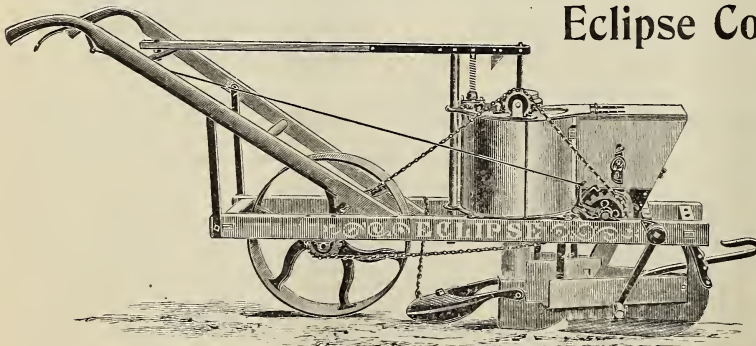
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